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Editor :
SUTINDER SINGH

A Paradigm for Making Education Indigenous and Contextual

A. N. Maheshwari*

India is a country with an ancient civilisation well known for its system of education. It had evolved a unique system of education called, *gurukul*, which meant teacher's home, as the education of the student took place at the home of the teacher.[1] With Buddhism, education shifted from the home of the teacher to the monastery. In the Middle Ages some of the monasteries developed into true universities. The most famous was the Buddhist monastery of Nalanda in the 3rd century AD. The 7th century account of Nalanda of Hsuan Tsang reveals that this institution vibrated with intellectual activity and training was imparted not only for the study of Buddhist texts but of Hindu philosophy, logic, grammar, medicine and other disciplines. In monasteries, in addition to oral recitation, teachers used a variety of teaching methods such as exposition, debate, discussion, question-answer, stories and parables. More than 10,000 students of different faiths from within the country and abroad, who had passed strict oral examination, were provided with free education in Nalanda. Many other monasteries all over the country developed as centres of learning.[2]

With foreign invasions and changes in the political structures, the indigenous educational system also changed and got increasingly marginalised. The final nail on the coffin was the decision of the British government to promote through education the European literature and science among natives of India. In place of *gurukuls*, in the first quarter of the 19th century, primary schools on the pattern of similar schools in England were opened in the country. The Government appointed the teachers in the primary schools and thus education instead of being a community responsibility became the responsibility of the State. The reach of the educational system during the colonial period, therefore, became limited. More persons were out of it than who had access to it. This is clearly revealed by the literacy figures at the time of the independence. According to the census of 1951, only 271 in every 1000 men and 88 in every 1000 women could read and write.

In the Article 45 of the Constitution of the Republic of India, the commitment of the newly independent nation to provide universal education was enshrined. The Article 45 reads

> *"The State shall endeavour to provide, within a period of ten years from the commencement of the Constitution, for free and compulsory education for all children until they complete the age of fourteen years."*

This task was taken up with earnestness by the State and there has been a phenomenal expansion of education system in past fifty years. But the challenge of providing universal elementary educational became increasingly difficult to achieve because gains of the expansion of the school system continued to get offset by the high population growth. The goal of achieving universal literacy receded faster than

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the effort put in to catch up with it. After forty years of independence there were more illiterate persons than the total population of the country at the time of independence. According to the census of 1991, out of every 1000 men 641 and out of every 1000 women 392 could read and write.

The quantitative expansion of the school system in the independent India continued to follow the model of the primary school education introduced by the colonial government. It was a costly model because it involved construction of school buildings, appointment of teachers and expansion of the bureaucratic structures for the management of the State's school system. Invariably new schools were opened up without ensuring the essential learning conditions. Shortcuts such as starting rural primary schools with only one classroom and appointing one teacher when at least two were required seem to have been indiscriminately followed. Often untrained teachers who did not possess the prescribed levels of education were appointed. It is, therefore, not surprising that researches have also revealed that the post-independence expansion of the school system has entailed dilution of the quality of education. Also, there have been few serious efforts to evolve cost-effective indigenous models of school education relevant to the needs of the people of our country. The end result is that even after 50 years of independence, the colonial legacy of an impersonal school system, marked mainly by its utility as a passport for employment and for upward social mobility, continues as the driving force for running it.

The futility of achieving universal elementary education by following the colonial model can be brought out by a back-of-an-envelope calculation. For the sake of argument let us fix the model of education through formal schooling by stipulating the norm that for taking care of education of a group of 40 children one teacher and one classroom are required. For estimating the additional cost of providing school education to all children in the age group 6 to 14 years we use the demographic projections prepared by the Registrar General of India and the estimates of enrolment in the primary and the upper-primary stages given in the selected statistics[3] issued by the Ministry of Human Resources Development (MHRD), Government of India.

According to the Registrar General of India[4], the projected child population in the age group 6-14 years in 1996 was 187,704,000. In the academic year 1996-1997 the estimated number of children enrolled in the primary stage (classes 1 to 5) was 110.4 million and the estimated number of children enrolled in the upper primary stage (classes 6 to 8) was 41.0 million. Therefore, about 36.3 million children of this age group were out of school. For taking care of education on the out-of-school children at the rate of one teacher for forty children 9.07 lakh new teachers will be required.

According to the Sixth All India Educational Survey (6th AIES)[5] recently conducted by the NCERT the total number of teachers in position in the primary and upper-primary schools were 20.13 lakh and 10.36 lakh respectively, whereas for educating 151.4 million children at the rate of one teacher for 40 children 37.85 lakh teachers should have been in position. Therefore, additional 7.35 lakh teachers may have to be appointed in the primary and upper-primary schools if the teacher pupil ratio is to be maintained at 1:40. Thus as per our estimate 16.42 lakh new teachers are required for keeping all the children in the age group of 6 to 14 years in schools. The annual salary of an elementary school teacher including allowances at the entry level of the Fifth Pay Commission pay scales is Rs. 85,680. Therefore, the recurring financial burden on the State for meeting the salary component of the new teachers will be Rs. 14,068 crore. In addition to appointment of teachers new classrooms will have to be built in schools. Their number can also be estimated. If for each group of 40 children one classroom is to be made available then the number of classrooms required for 187.7 million children will be 46.91 lakh. The total number of classrooms in the primary and the upper-primary schools as per the 6th AIES[6] are 21,29,300. Therefore, 25,63,300 additional classrooms may have to be built in the schools. If a modest budgetary provision of rupees one lakh for constructing one classroom is made, the non-recurring financial liability on the State under this head will be Rs. 25,633 crore. Over and above these estimates funds will be required for the training of new teachers, and for providing mid-day meal, books and uniforms for children. Funds of this magnitude are not available with the State. Therefore, the commitment of the State to provide free and compulsory education to all children in the age group of 6 to 14 years has been reduced to a pipe dream.

Because of the financial constraints it has not been possible for the State to improve the infrastructure in its schools and the essential learning conditions have seldom been met. This has resulted in lack of confidence in the ability of the State's schools to provide quality education. Even those parents who can ill afford to meet the cost of education of their children prefer to struggle and avail of education in private schools for their children. It should, therefore, not shock us when we find that high fee charging private schools have mushroomed even in the rural areas. The worst affected are the children belonging to the tribal groups and those belonging to the scheduled castes. What is the way out of the prevailing impasse?

The way out is to liberate education from the dictates of the western thought and to adopt an indigenous model of education based on the thoughts of thinkers like Gandhi, Sri Aurobindo, Tagore, Swami Dayanand, Krishnamurthy, Vivekananda and many others who today are silently carrying out experiments on education relevant to the ethos of our country. Cost effective models of education are to be evolved for providing contextual and relevant education for meeting the varying geographical and social conditions. The model of providing a school and teachers in the ratio of one teacher for each group of 40 children may have to be replaced by a *gurukul* type of a school system in which members from the community take the direct responsibility of providing education to their children. The community may like to allow the premises of its places of worship or some other common area for imparting learning to its children. Also, the community as it is the main stakeholder in the education of its children has to play a proactive role in ensuring that the schools run by the State for its children perform at an optimum level. In operational terms it would mean that schools open for the stipulated time on all the working days and teachers teach with interest. The community may have to critically examine the relevance of the learning materials to their context and give their mind to the teachers of their schools to customise teaching learning as per their requirements.

The parents are also concerned that teaching learning, especially at the secondary stage, is bookish and fails in imparting life skills to their children. The children learn by rote facts and figures on items remotely connected with life of their community. They fail to acquire skills that might help them in becoming viable in the world of work. Not all children possess aptitude for higher learning and will be satisfied if they can learn skills instead of bookish knowledge. To meet this situation some of the secondary schools may have to be turned into *skill centres* where children can learn some craft.

Another concern in education, particularly at the higher secondary and the tertiary levels, is that in its present form it is not relevant to the emerging demands of the global advancements in science and technology and to the changing nature of the world of work. The general feeling in the youth is that the general tertiary education offered by the universities and colleges is too academic and inflexible. Students prefer to pay any price for obtaining professional education and undergo general education leading to graduate degree as a last resort. As higher education is expensive the challenge, therefore, is to make it attractive to students so that they may like to avail of it by paying for it and thus reducing the financial burden on the State of meeting the full cost of higher education.

The recent revolutionary developments in communication and information technology have opened up cost effective approaches for providing the reach of higher education to the youth as well as to those who need continuing education for meeting the demands of fast changing nature of occupations. As the world is gradually entering an Information Age, India also has to re-engineer its education system at all levels to organise itself as a learning society. In this context all educational institutions, particularly of higher education, may have to undergo a paradigm shift for playing a role in building a learning society by making each individual a lifelong learner.[7] The focal point of programmes of the universities and colleges have so far been on exposing the heritage of human knowledge and advancing the frontiers of academic disciplines through research and development. In a learning society every human activity will require inputs from experts for making it relevant to changing technology and constraints of resources. For example, agricultural colleges and universities through their extension activities at the grassroots level contributed to the green revolution in India.

Therefore, what is now required is that colleges and universities assume the responsibility of finding solutions to problems of industry, commerce and of all such other activities of the society for improving the quality of life of the common man. Also, the nature of work in the information age will divide occupations into two broad categories : high-paid knowledge work; low-paid service work.[8] High-paid knowledge work will be performed by those who know how to manage information and process it. The society will give high premium to their skills.

Recognising that Information Technology will be a frontier area of knowledge in the 21st Century and a critical enabling tool for assimilating, processing and for providing value addition to all spheres of knowledge, the Government has decided to launch *'Operation Knowledge'* as a part of the Information Technology Action Plan. Under this scheme computers and the Internet shall be made available in every school, polytechnic, college and university and all universities, engineering colleges, medical colleges and other institutions of higher learning in the country as well as Research and Development Organisations shall be networked for improving the quality of education. These inputs would entail that appropriate pedagogy is adopted for providing effective learning when access to global learning resources becomes available through the world wide web and the courses of study at least at the higher education level are made modular and flexible. This would make it possible for each learner to choose his/her learning programme required by him/her for acquiring skills for a selected prospective occupation. In a flexible programme the substantial responsibility for learning will be on the learner. The learner would have to first learn how to learn and through self-study under the guidance of his/her teachers will construct his/her knowledge. This would necessitate among other initiatives examination reforms, delinking of degrees from jobs and curricular reform for bringing in emphasis on multi-disciplinary courses. Such changes in our educational system will be recognition of the sovereignty of the learner and for making education reality oriented and learner centred.

References

1. Basham, A.L. (1954) : *The Wonder that was India*, Grove Press, Inc., New York.
2. Altekar, A.S. (1951) : *Education in Ancient India*, Nand Kishore Brothers, Banaras.
3. Ministry of Human Resource Development (1998) : *Selected Educational Statistics* (1996-1997), Department of Education, Government of India.
4. Registrar General of India (1997) : *R.G.I. Letter No. 6-3/95. DD Vol II dated 24.6.1997.*
5. Sixth All India Educational Survey (1998) : *National Tables Vol 3 (Teachers in Schools)*, National Council of Educational Research and Training, New Delhi.
6. Sixth All India Educational Survey (1998) : *National Tables Vol II (Schools and Physical Facilities)*, National Council of Educational Research and Training, New Delhi.
7. Maheshwari, A.N. (1998) : An Alternative Agenda for Higher Education, *University News* Vol 36 No 40, Association of Indian Universities, New Delhi.
8. Gates B. (1996) : *The Road Ahead*, Penguin Books, London, England.

CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR

Notification No. CSJMU/02/Adm/1185/98 Dt. 21-12-1998

Applications are invited on the prescribed forms for the appointment to the following posts in different departments/institutions of the University. The number of posts, the faculty position, post for reserved categories and other relevant details, are as under (the details of essential qualifications/experience and area of specialization for various posts of departments have been given alongwith application form) Reservation applied as per Govt. rules and regulations wherever applicable. ;

Name of the Deptt./Ins.	Professor No. of Posts	Reader/Asstt. Prof. No. of Posts	Lecturer No. of posts
(A) Institute of Engg. & Technology			
1. Physics	....	1+1 (SC/UR) (SC, Back Log)	01SC (Back Log)
2. Chemical Engg.	01	....	01 (UR)
3. Maths	....	1+1 (SC/OBC) (SC Back Log)	....
4. Humanities	....	....	01 SC (Back Log)
5. Mechanical Engg.	01	....	1+1 (UR/ OBC)
6. Electronics and Communication	01	....	....
7. Computer Sc & Engg.	01	....	....
(B) Deptt. of Edu.	01	....	....
(C) Deptt. of MBA	....	02 SC (Back Log) 01 UR	01 OBC
(D) Deptt. of Adult & Continuing Education (Professor cum Director)	01	....	....
(E) Instt. of Life Science	01	....	....

Note : All the posts (other than the posts of Adult & Continuing Education Department) are temporary but likely to be made permanent.

Pay Scales : (New Scales of pay-to be revised)

(i) Professor - 4500-150-5700-200-7300
(ii) Reader/Asstt. Professor - 3700-125-4950-150-5-5700
(iii) Lecturer - 2200-75-2800-100-4000

The Department of Adult & continuing Education is temporary establishment and its continuation depends on the period of grants available from U.G.C. or U.P. Govt. Hence the period for appointment on the post of Director subject to extension of the period of grants to the department.

HOW TO APPLY :

The OBC and SC/St candidates are required to send their caste certificates. The OBC candidates are also required to enclose their Non-Creamy Certificate as per Govt. Notification No. 22/16/12ka/2/1995/TC dated 08 Dec. 1995, as per amended format enclosed with the application form, otherwise their application form will be considered in general Category.

The candidates belonging to SC/ST and OBC may apply as general candidate.

On the prescribed application form, the informations relating to qualifications and specialization for various posts as per UGC/AICTE Norms and Statute of CSJM University, Kanpur can be obtained from University Counter, either on cash payment of Rs.100/- or by sending a crossed Bank Draft for Rs. 125/- drawn in favour of Finance Officer, CSJM University, Kanpur.

The Candidates from abroad may, however apply on plain paper.

N.B. : The candidates who have already applied properly against the advertisement of this University Notification No. CSJMUK/01/98/Adm/791 dated 02-5-1998 need not apply again.

Five copies of the completed application on prescribed form accompnied with testimonials should reach the University on or before 07-02-1999

The envelope containing application form should be superscribed as 'application for the post of ....'.
Address for all correspondance Registrar CSJM University, Kanpur - 208 024

B. K. PANDEY
Registrar

P. ADS.

Why Are Our Teachers Alienated From The Higher Education System ?

J. N. Kapur*

I

Are the Teachers Alienated ?

About 20 years ago, I wrote an essay at the request of my friend Dr. Amrik Singh, which was included in his book *On being a teacher*. I wrote "I have been proud of my noble profession of teaching and if I were to be born again, I would again like to be a teacher".

Reviewing this book in The Hindustan Times, Kishore Gandhi wrote that "In the present environment Dr. Kapur may be a solitary individual who is proud of being a teacher." I did not agree with him since I believed and still believe that there are thousands of teachers in the country who are dedicated to teaching and who enjoy their experiences as teachers. However, in the present circumstances, I would myself like to modify my earlier statement as follows "If I were to be born again, I would once again like to be a teacher of highly motivated students in a society which recognises the worth of real quality education either for the sake of intellectual development of the society or for the sake of occupying a place of honour in a world dominated by knowledge as the most important source of power".

I am making this modification because I would not like to teach students who are not interested in learning, but who are interested only in acquiring paper degrees by working for two months in a year with the help of made-easy books and forgetting whatever they learn as soon as possible. I would not like to teach a class in which the attendance is less than 90 per cent and in which different students are present on different days. Many of the teachers in higher education today have to teach under these difficult conditions and it is easy to see why they become alienated from the system. Many teachers consider teaching under these conditions as a burden and they are happy whenever there is an opportunity to avoid taking classes. Many teachers are dissatisfied with the conditions under which they have to work. They teach only because they have to earn their salaries and not because they enjoy the teaching process. There are many other reasons for teachers being alienated from the system and we discuss some of these in the next section.

II

Why are the Teachers Alienated ?

The teachers are alienated because

1. They have to teach unmotivated students who are not regular in the classes and who believe that they can pass examinations even if they don't attend lectures of the teachers.

2. The teachers have to teach a syllabus in the framing of which they have no hand. Out of 2000 teachers in a subject in the university, only 5 or 6 senior persons, who may not be up-to-date in the modern developments in the subject, are associated with the framing of the syllabus, so that more than 99 per cent of our teachers are not involved in the framing of the curriculum. The teachers become alienated when they have to teach topics, which they believe sincerely should not be taught or when they are not allowed to teach topics which they believe should be taught and no explanation is given why some topics are included, while others are excluded.

3. The teachers do not get any feedback on their teaching. There is no students' evaluation of their teaching and they do not correct the answerbooks of their students since their students are evaluated by anonymous examiners and even if some of their good students do not do well in an examination, they do not know the reason.

4. They can't guide the students to read good textbooks or reference books, because the students would like to read, in the present system, only those help books which are useful from the examination point of view.

5. Even if a teacher wants to teach a full-course, the students are not prepared to co-operate, because they want to study selectively because of the large choice in the examination papers.

6. The students prefer those teachers who help them in doing selective study for the examination

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Jawahar Lal Nehru University and C.V. Kapur Educational Foundation, C-766, New Friends Colony, New Delhi-110 065.

and who give them some helpful hints for the examination and they don't like teachers who may like to teach them in depth.

7. On the whole, the teachers are not trusted and it is assumed that if they are asked to evaluate their own students, they will be unfair in their evaluation, because it is further assumed that teachers will also examine under the rules of secrecy of the present system. This lack of trust by the society in the teachers leads to loss of faith by the teachers in themselves and it further leads to low performance by the teachers. This is inspite of the fact that whenever the teachers in India have been given the full responsibility for evaluating their students as in IITs, agricultural universities, some postgraduate departments, there have been no complaints of partiality. The trouble arises only when teachers are given partial responsibility and evaluation by them is not done transparently. Moreover the major part of evaluation is still done by external examiners. Teachers will not be alienated if they are fully trusted and the system is completely transparent.

8. The teachers don't come into personal contact with the students except possibly in extra curricular activities. There is no scope for academic discussions between students and teachers.

III

Combating Alienation ?

1. We have to introduce completely objective continuous internal transparent examination system, in which teachers examine the answerbooks of their own students, show the answerbooks to all students so that they are convinced of the fairness of the system.

2. The students are given grades rather than absolute marks and the teachers can give different grades on the basis of the normal distribution so that only few students get very high or very low grades.

3. The teachers may keep record of all the assignments and quizzes given during the year to the students, so that every one can see that the whole course was covered according to a certain schedule announced in advance.

4. In this system both the students and teachers will work throughout the year and each group will be accountable to the other. In this system teachers and students both will have to work hard and more regularly. But the teachers will feel that they belong to the system. In fact, they design the broad outlines of courses and then fill out details as they go along with the teaching. This will bring them nearer to the students and to the system. In this system assignments can also be corrected by teaching assistants under the supervision of the teachers.

IV

Concluding Remarks

It is a tourism that no educational system can succeed if the students and teachers are alienated from it. Whatever be the difficulties in implementing the above programme, it is the only programme which can bring students, teachers and system closer together. Moreover, those who have some objections to this programme have the responsibility of proposing an alternative programme which will remove the alienation of students and teachers from the system. We must see that students and teachers have their hearts in the system and are enthusiastic about it. As more and more information technology begins to be used in the educational system, there is more and more urgent need for reforming the educational system, otherwise, the students may turn to internet and other resources for information and the teachers may become almost redundant.

Fortunately education is not just transmission of information but it is also transmission of certain ethical, moral and personal academic values which human teachers can give and in their absence, the students may have all the knowledge, but may not have the wisdom to use it, in their own interest and in the interest of mankind.

In the absence of academic satisfaction for the teachers, the only other satisfaction which the teachers seek is the salary satisfaction and they only struggle for this. Once their alienation from the system is removed, they may also fight for getting academic satisfaction from the system.

The teachers in other countries are not alienated because they had already adopted the changes we are proposing here long ago. There students and teachers work throughout the year and strikes by students and teachers are almost unknown. Teachers fight as much for academic values as they fight for their salary scales.

TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communication should, however, be brief and to the point.

Exploration of Innovative Teaching and Evaluation Scheme in Physics

Kapur Mal Jain*

Education in its true sense, is supposed to provide a perfect coherence between the mental, moral and physical powers. It can, thus, make one a good and educated human-being. But an education system may not necessarily provide a job. Getting a job solely depends upon the job opportunities and number and types of jobs available. Then, the question arises, what should be the true role of an education system and how can it be made effective as far as jobs are concerned ? There is no doubt that in getting a good job in private sector, one requires talent and charming personality. Intentionally, we are not talking here about the public sector where the elements of corruption are said to be deep-rooted. An educational institute can effectively inculcate and carve students' overall personality by providing creative, fearless and learning atmosphere. It can help in enhancing the spirit of competence in them and can also help them in making more efficient and articulate communicators. The role of physics in any institute is very important in this context and cannot be underestimated.

The Role of Physics

As physics deals with nature and its manifestation as it appears in form of physical world, it has a major role to play in fulfilling the basic objective of any institution. The studies of physics can induce rational thinking, life-long youthful enthusiasm, self-control even during most trying moments through problem solving approach, inexhaustible curiosity, thirst for knowledge, self-discipline and boldness in the students. This is the reason that a physics department must concentrate on evolving a new teaching methodology and evaluation system first which may become a model for other subjects later on.

The teachers should stress upon the logical development of the subject in simple lucid manner in the class. The subject should be initiated from the general and the familiar observations of naturally occuring phenomena present in the surroundings. For this, the syllabus should be designed in such a way that a flow is automatically maintained. It is better if the teachers of the department develop flow-charts of the papers they plan to teach. This will help students step into the subject in most palatable way without realising its toughness. To inspire the students and to make them curious, tracking the history of discoveries should be made a part of lecture, if possible. The students love to know the way an idea has grown in the past. The stories related to the important discoveries inspire them and help them realise their own potential. This innovation in teaching will create a great interest in the students without any doubt.

Teaching Methodology

The subject can be taught in both formal and informal manner. Formal traditional method of learning through classroom teaching should smoothly be changed to avoid spoon feeding. Appropriate teaching aids may be used to support classroom teaching in a healthy, fearless and creative atmosphere. Following suggestions are made :

Subject Knowledge

In order to create an atmosphere where the students feel the subject interesting and help them in gaining deeper knowledge of the subject, following steps may be taken :

i) Modification of the syllabus of both theory and practicals with emphasis on quality and not on quantity may be undertaken as a first step. However, much more should be planned to deliver in the course but in informal ways and through self-learning process.

ii) Practical hand plays vital role in leading successful life far a man. The aim of the teacher therefore, is to produce students with good practical hand. For this, the 'black-box' type of experiments should be avoided as far as possible. The students must be given an opportunity to open, to see and to reassemble the experimental set-up or an instrument which can help them think of some new and wider application of the components they are using. Further a subjective approach should innovatively be followed instead of conventional objective approach while developing the laboratory syllabus. In other words, a list of phenomena should become the basis of syllabus and not the conventional well defined list of experiments. Here, the students will get flexibility and

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**Professor of Physics, Institute for Excellence in Higher Education, Bhopal (M.P.).*

freedom to choose and plan his/her experiments. A broad outline of the laboratory course based on the theory syllabus, the physical phenomena observable in the daily life and the topics related to the latest developments in the areas of say, nonconventional energy sources, lasers, computers etc. can be prepared.

iii) In order to generate interest in creative studies, the students should work on a project of their choice. This inclusion of the project work in the syllabus will provide an opportunity to the desirous students to utilise their creative potential to learn and extend the existing ideas through interplay of mind and hand.

Fearless and Creative Atmosphere

Clear understanding and development of reasoning are essential elements for learning the subject. For this a creative and fearless atmosphere is required. The teachers should, therefore, put their honest, sincere and whole hearted efforts to provide fearless and creative atmosphere in and outside the classroom. The teachers must play their catalytic and stimulating role. The teachers after introducing the subject should provoke the students to ask questions which should become the nuclei for further discussions and growth of the subject. If some irrelevant question is asked by the students, they must not be discouraged but they must be tackled in such a way that they feel encouraged to ask a better question next time. Further, the teachers should ensure that a student answering wrongly should not be insulted or punished in any way in the class. Thus, this method will help in studying the subject in logical manner and in most fearless and creative environment. To stimulate learning in the students during the classroom teaching, some demonstrative teaching-aids can advantageously be used by the teachers.

Informal Routes for learning

Stress must be put on imparting knowledge through informal routes. There is a common belief that if the students are involved in the academic activities other than those prescribed in the syllabus, their performance in the examination is severely affected. But I do not agree with this. Actually speaking, each and every body wants to break the monotony. The students also want a change to get refreshing moments in their monotonous regular routine of studies. If at this need of the hour, institutes help in creating an atmosphere in their surroundings by including the informal activities of their interest then their energy can be channelised, their capacity to concentrate can be enhanced and they can find opportunities to learn in informal ways. The students, thus, easily get refreshed and study in a better way. Following informal and refreshing routes for learning are suggested :

i) *Organising 'Field Workshops'* : This is a picnic-cum-workshop. The students participating in these workshops will go to a picnic with the aim of observing nature and its manifestation individually or in a small group. The recorded observations of certain phenomena of each participant which made them curious, may appropriately be discussed in presence of their teachers to discover related physics behind them. This will help the students to gain deeper insight into the nature and encourage them for self-motivated learning.

ii) *Organising Exhibitions* : The creativity of the students may spark through the preparation of exhibits. The chart/poster exhibition costs nothing as compared to the pleasure they derive after competition and the appreciation they get from the visitors.

iii) *Undertaking Surveys and Academic Tours* : The surveys related to energy and environmental problems may make the students socially emotional and may encourage them to work in a constructive manner in the field of science following eco-friendly approaches. Visits to the reputed educative establishments under academic tours will inspire the students. These will also help them in making academic contacts and in bringing better awareness of the latest developments. This programme, thus, helps in broadening their horizon.

iv) *Releasing Departmental 'Newsletter'* : It will provide an opportunity to the students in improving their knowledge and language competence and evolving their creative potential. Timely release of the Newsletter and its editing will help the students realise the importance of responsibility and time management.

v) *Quiz Test* : The quiz may be organised weekly on any day say, on every Saturday. The responsibility for conducting the quiz should be given to two students, who may act as anchors or hosts for that week's quiz. Next week, this responsibility should be transferred to the next two students according to their roll numbers. This process of host selection will continue in cyclic order. The anchors should collect 5 or more questions from each student before wednesday and get them moderated by the subject teachers before Saturday. The students submitting questions are expected to write each of their questions on a separate card alongwith their name and answer of the question. It is the joint responsibility of the question setters and the hosts to maintain the secrecy and to ensure fair organisation of the quiz.

This quiz organised by the students under the supervision of their teachers will prove to be very effective. The main advantages to the students are :

a) They will learn to set or select tricky questions.

b) They will learn how to conduct a programme to the satisfaction of all.

c) They will be mentally prepared to answer any question atleast from the syllabus and related topics of general interest covered during 'guest lectures' in the institute.

d) They will be prepared to face trying moments and learn to live with patience.

vi) *Assignments :* After completing a topic followed by group discussions in the class, home assignments should be given by the class teacher. The students should submit their assignments after completion alongwith a list of references which they consulted. This will encourage the students to consult the library and improve their reading habits.

vii) *Local Educational Visits :* Visits to the local educative establishments will evolve creative instinct and bring better subject awareness in the students without much expense.

viii) *Seminars :* Two groups will be formed. One group will evaluate the members of other group under the supervision of their class teachers.

ix) *Group Discussions :* After completing each topic, a group discussion session will be organised. Here again, a group of students will evaluate the other group under the supervision of their class teacher.

x) *Lecturing by Students :* Teaching is the best way of learning. The students should be asked to deliver a lecture on a topic of their choice. For delivering the lecture, the students will thoroughly prepare the subject in presentable form. This will make them confident and help in developing communication skills.

xi) *Organising 'Guest-lectures'* on topics of current and general interest : This will be a source of information of developments and latest thoughts on frontline and border-line areas of the subject. If these act as a source of inspiration, then this will definitely provide the students with a rare opportunity of choosing the right ideals for their future career.

Exploration of new Continuous Teaching and Evaluation System

(1) *Programme-Teaching accompanied by continuous assessment*

The synopsis of the lectures should be distributed to the students atleast a week earlier to avoid spoon feeding. The subject matter must be developed in the class through active participation of the students.

In order to get proper feedback, a few students, randomly selected, may be asked to submit a copy of the notes just recorded by them during the class. This will help the class teacher in evaluating the standard of the students of the class. The teachers can use this assessment as a basis to plan their lectures in the class.

The class teacher may give four internal tests in a semester for each paper to facilitate continuous evaluation of the students. These tests may be surprise or semisurprise in nature. This will make them realise the importance of classroom teaching. It will further help them in improving their concentration and grasping power in the class. They will learn to remain alert and careful at all times during the progress of teaching. The marks obtained in best three tests out of four may be included while preparing their final result. The weightage of these tests should be atleast 25% of the total marks alloted for that paper. After each test, students should be asked to submit a self assessment report analysing his/her performance critically.

(2) *Self-learning Techniques and their Inclusion in the Evaluation*

Following nonconventional techniques, as described earlier, are suggested to be incorporated in the teaching process :

i) Seminars, ii) Group discussions, iii) Lecturing by students, iv) Quiz test, v) Assignments

The self-learning through above methods should be considered at the time of final evaluation of the students and about 25% weightage may be given to this type of learning process.

Renovating the Format of Marksheet and Certificate

These should also include the performance report of the students. These performance reports, should reflect the overall personality of the student. For this, following points must be kept in mind :

i) Punctuality and sincerity record (evaluation criterion may be based on attendance)

ii) Work habits (evalution criterion may be based on library work, home assignments, project/fieldwork/seminars, obedience and discipline, institutional/departmental activities e.g. contribution in the Newsletter and Magazine, Exhibition etc.)

iii) Social and creative habits (evaluation crite-

(Contd. on page 20)

Kumar's Scale for Measuring Distance Learners' Attitude Towards Distance Education

Anil Kumar*

Introduction

Distance education has now earned the credibility of a viable and an effective alternative channel for imparting education at all levels all over the world and India is no exception to it (*Kumar*, 1996). In India, we have at present eight open universities including one National open university and more than fifty directorates of distance education/correspondence education attached with the conventional universities imparting education through distance mode mainly at the tertiary level. Besides these, there are twelve open schools including one National Open School imparting education up to senior secondary level through distance mode.

Learners enrol to various courses/programmes offered by these institutions for many reasons. The successful completion of the course or the programme by the learners *inter-alia* depends upon their satisfaction with the course/programme provided by the institution. This will lead to have a positive and favourable attitude towards the distance education system.

Further, distance education is emerging as a distinct discipline by itself and has drawn attention of educational researchers to probe various aspects of this innovative system in many foreign countries like UK, Canada and Australia and also in many Asian countries including India (*Kumar*, 1998). However a review of various researches available in this field shows the non-availability of a comprehensive tool to measure the distance learners' attitude towards various aspects of distance education system. This calls for the development of a comprehensive tool to measure the distance learners' attitude towards this innovative system. The following pages give the details of the development of an attitude scale.

Definition of Attitude

Attitude is normally defined as a generalized pattern in perception or action towards an object or thing as in integration of various experiences. In the beginning of the twentieth century itself, psychologists started defining 'attitude' in many ways. However, Allport (1935) identified three main features of attitude as : (a) preparation of readiness for favourable or unfavourable response, (b) which is organised through experience, and (c) which is activated in the presence of all objects and situations with which the attitude is related. Again, Fishbein and Ajzen (1975) also provide three essential features of attitude. According to them, 'attitude is learned... it pre-disposes action, and such actions are consistently favourable or unfavourable towards the object". These two attempts clearly help to understand what attitude is.

Measurement of Attitude

Thurstone boldly asserted that 'attitude can be measured'. Attempts to measure attitude require making of inferences about attitude from some observable indicator. The most commonly used method that enables inference to be made is based on individual's responses to a series of sentences or adjectives presented in the form of a scale. The most frequently used scales are Likert Scale, Thurston Scale, Guttman Scale, and Semantic Differential Scale. These scales are widely used in educational research for the measurement of attitude.

Students' Attitude Towards Studies

Pupil and teacher attitude studies are quite common in behavioural sciences. In the field of education, among the various affective correlates of academic achievements, attitude towards various areas of education (school, studies, learning, subjects, etc) figured as an important attribute. Various researchers in the field of education have tried to show the relationship between attitude towards school/studies and academic achievment. Thus it highlights the importance of developing desirable attitude towards studies for the success in education.

Attitude Towards Distance Education

Even though, distance education is a very recent phenomenon, a number of studies have been conducted to know the learners, teachers and society's attitude towards this innovative mode of education. In the Indian context, only a few micro level studies have been attempted to measure distance learners' attitude towards distance education. They all become only a part of their studies (for example : *Khan*, 1982;

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m, 1984; *Sahoo*, 1985; *Sahoo and Bhat*, 1987; *Panda d Chaudhary*, 1989; *Renu*, 1990; *Pandey*, 1991; *Nagpal*, 92, etc.) Moreover, they were limited in their scope d range.

ationale for Construction of Attitude Scale wards Distance Education

A review of attitude studies in the field of dis- nce education revealed that most of the tools pre- ıred were focused on the correspondence educa- n prevailing in those days. However, establishment national and state level open universities changed markably the method of instruction and student ıpport services to the distance learners. In this ıanged scenario, it was very essential to develop a mprehensive tool, which would measure the dis- nce learners' attitude towards distance education a variety of dimensions. Thus the author made an tempt in this direction. The actual construction pro- dures are explained in the following paragraphs eping in view the steps suggested by Edwards, 69.

ationale for Using Likert Scale

Among the different techniques available for the nstruction of attitude scale, the more popularly sed techniques are : (a) the method of equal appear- g intervals known as the 'Thrustone technique' and) the method of summated rating popularly known 'Likert technique'. These two methods are widely sed in educational research. Each technique has me advantages over the other. However, Likert's chnique was preferred in the present tool construc- on as there is a scope for the expression of intensity an opinion through the scaled response besides eing easy to construct.

Likert scales consist of a series of statements, all f which are related to a person's attitude towards a ngle object. Two types of statements that appear Likert scales are : i) favourable statements, and ii) nfavourable statements. An approximately equal umber of favourable and unfavourable statements, pically, are included on a Likert scale. The proce- ure followed for the construction of Likert type at- tude scale is described below.

ollection of Items

The author first enlisted all possible areas/scope f distance education. Then consulted the recent lit- ature available as well as with the professors, teach- s and counsellors (working in the field of distance lucation) from the IGNOU, NCERT, NIEPA, AIU, IOS, etc, for writing the items. Previous small scale udies, like that of the project work of the students f Post Graduate Diploma in Distance Education offered by the IGNOU, some M.Ed., M.Phil dissertations and Ph.D theses in the area of distance education were also consulted to cull out the items for the attitude scale. These items were then discussed with the experts in the field at different intervals to determine the relevance of items to be included in each category in order to avoid replication. Efforts were made to improve the language of and to remove ambiguity in items to make them understandable to the learners in its first reading. The collected items were thoroughly screened and edited. Thus a total of 100 items were included in the preliminary form of the attitude scale.

The Preliminary Form of the Scale

After preliminary screening and editing of the statements and their pre try-out and modification, the preliminary form of the attitude scale comprised 100 items of Likert type on a five point rating scale. Each item, therefore, contained five alternative responses such as Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree (SD). It was a self-administering tool without any time limit. The scoring was based on a five point Likert type scale designed for a positive item weighed a score of 5 for SA, 4 for A, 3 for UD, 2 for D and 1 for SD and for a negative item 1 for SA, 2 for A, 3 for UD, 4 for D and 5 for SD. The summated score of all the 100 items provide the total attitude score. Thus the maximum possible score on the whole attitude scale was 500 and the minimum possible score was 100. A high score on the scale indicates a favourable attitude, while a low score an unfavourable attitude towards distance education.

Try Out

The draft attitude scale was then administered to a group of 140 Bachelors' Degree Programme (BDP) distance learners of the IGNOU by visiting various study centers of the IGNOU situated in the National Capital Territory of Delhi. Proper sampling procedure was followed to select distance learners from each zone and from varied categories like employed/unemployed, male/female and experience in distance education, etc. The responses were collected and scored for each individual separately.

Item Analysis

Item analysis was carried out to eliminate inconsistency of the items. The responses of the subjects were scored by allotting weightage to the items as described above. The weighted score for each item, and also for each subject, was totalled up. On the basis of the total scores, 27% of the high scores (High group) and 27% of the low scores (Low group) among the group were identified. Their scored responses in terms of weighted scores for each item was worked out. Item analysis was carried out by using 't' test for each of the 100 statements for the higher and lower group. Thus the significance of difference between the means were worked out to find out the discriminating power of each item; how well each item could distinguish between individuals having different attitudes. Only those items, which showed a significant difference between high and low groups, were selected for inclusion in the final form of the scale.

Final Form of the Scale

The final form of the attitude scale consists of 70 statements in 8 dimensions of distance education (*Appendix*-1). There are 30 positive statements and 40 negative statements (*Appendix*-2). The distribution of items in the 8 domains is presented in Table 1. Each item in the attitude scale is provided with five possible alternative responses such as Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD).

Table 1 : Distribution of Items in Eight Domains of Attitude Scale towards Distance Education.

S.No.	*Domains of Attitude*	*S.No. of Statements on the Scale*	*Total of Items*
1.	General	1,2,3,4,5,6,7,8,9,10	10
2.	Admission Procedures	11,12,13,14,15	5
3.	Self-Instructional Material (Print)	16,17,18,19,20,21,22, 23,24,25	10
4.	Multi-Media Instruction	26,27,28,29,30,31, 32,33,34	9
5.	Assignments	35,36,37,38,39,40, 41,42,43,44	10
6.	Counselling Sessions	45,46,47,48,49,50, 51,52,53	9
7.	Study Centres	54,55,56,57,58,59, 60,61	8
8.	Evaluation System	62,63,64,65,66,67, 68,69,70	9
	Total		70

Administration of the Scale

The attitude scale is a self-administered tool. This scale is mainly used for adults who are pursuing their studies through distance education provided by the open universities or the Directorates of distance education of conventional universities where a multimedia instruction is prevalent. There is no time limit for the test. However, normally distance learners take 30 to 45 minutes to respond to all the items.

The following specific instructions were given to the respondents, "Here are some statements pertaining to various aspects of distance education. Each statement is associated with five possibilities of your response, viz. Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). Please go through each statement carefully and give your response by ticking (√) on any one of the five given responses."

Reliability

For the present attitude scale only split-half reliability was calculated. In order to obtain the split-half reliability, the test was administered only once and then divided into two halves by having all the odd-numbered items into first half and all the even-numbered items into second half. Thus two parallel halves containing 35 items each were obtained. The coefficient of correlation between the two halves was calculated. It was found that the coefficient of correlation between the two scores of two halves was $r = 0.84$. Then the reliability coefficient of the total test was calculated using Spearman-Brown prophecy formula :

$$rtt = 2r/1+r$$ (*Guilford*, 1956)

where 'rtt' is the reliability coefficient of the total test and 'r' is the coefficient of correlation between two halves of the test.

Hence
$$\begin{aligned} rtt &= 2 \times 0.84/1 + 0.84 \\ &= 1.68/1.84 \\ rtt &= 0.91 \end{aligned}$$

Thus, the reliability score obtained through split-half method was found to be high and much faith can be placed in the results obtained through this scale. Further, internal consistency between the scores on 8 domains and the total scores was also examined to substantiate the reliability index of the scale (*Appendix*-3). The coefficients of correlations shown in the Appendix-3 reveal that the minimum correlation value is 0.28 and maximum correlation value is 0.77. All the 36 values of correlation coefficients have been found to be significant at 0.01 level. Thus the coefficient of correlation matrix provides sufficient evidence for the high internal consistency of scores on 8 domains of attitude scale.

Face Validity and Content Validity

In the present attitude scale an attempt was made to ensure face validity and content validity through consultation with experts from the IGNOU, NCERT and NIEPA from the very beginning of identifying the statements to the final selection of the statements. On the basis of constructive comments by the experts, the items were modified/eliminated. Thus the face validity and content validity were duly ensured.

Norms

For the interpretation of the scores on attitude scale towards distance education raw score norms were prepared to the total sample. Table 2 shows the raw score norms or the scale for measuring the Attitude towards Distance Education (ADE).

Table 2 : Raw Score Norms for Attitude Scale

Interpretation	*Range of Raw Scores*
High ADE	281-350
Above Average ADE	211-280
Average ADE	141-210
Below Average ADE	71-140
Low ADE	1-70

Limitations

The present attitude scale was developed within the constraints of time, human and material resources available. Raw score norms were only developed for the interpretation of the results. No attempt was made to provide sex wise or age wise norms. Moreover, only face and content validity was ensured for the present attitude scale.

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(The opinion expressed in this article is purely of the author and no way reflects the policies of the institution).

References

Allport, G.W. (1935), Attitudes. In Murchison, Carl (Ed.) *Handbook of Social Psychology*. Clark University Press, Ch. 17.

Edwards, Allen, L. (1969). *Techniques of Attitude Scale Construction.* Bombay : Vakils, Feffer and Simons Pvt. Ltd.

Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intension and Behaviour : An Introduction to Theory and Practice.* Massachusetts : Addision-Wesley, Reading.

Khan, I. (1982). *Suitability of Teaching English through Correspondence Courses as Offered by Some Indian Universities at the First-Degree Level.* Doctoral Dissertation. Bhubaneswar : Utkal University.

Kumar, Anil (1998). Characteristics of open university distance learners : Some policy implications. *Journal of Higher Education,* 21(2).

Kumar, Anil (1996). *An Investigation into the Distance Learners' Academic Self-concept, Study Habits and Attitude towards Distance Education in relation to the Academic Performance at the First Degree Level.* Meerut, CCS University.

Kumar, K. (1981). Motivation of B.Ed. course students. In Buch, M.B. (Ed.), *Third Survey of Research in Education* (1986), New Delhi : NCERT.

Panda, Santosh, K. and S.S. Chaudhari (1989). Attitude, needs and problems of prospective distance teachers. *Media and Technology for Human Resource Development,* 2(1) : 45-53.

Pandey, Saroj (1991). Teachers' attitude towards distance education. *Journal of Indian Education,* 16(5).

Nagpal, S. (1992). *Investigation into the Usefulness of Distance Education.* Project Report, Diploma in Distance Education, New Delhi : IGNOU.

Ram, S. (1984) : *An Evaluation of Correspondence Education in Terms of Cost and Academic Performance.* Doctoral Dissertation, Meerut : Meerut University.

Renu, Arun (1990). *A Study of Success in Distance Learning System in Relation to Some Key Learned and Institutional Variables.* Doctoral Dissertation, Kurukshetra : Kurukshetra University.

Sahoo, P.K. (1985). *A Study of the Correspondence Education in an Indian University.* Doctoral Dissertation. Baroda : M.S. University of Baroda.

Sahoo, P.K. and Bhat, V.D. (1987). Students attitude towards correspondence system of education. *Journal of Indian Education,* 13(2), 28-33.

Appendix-1

Kumar's Attitude Scale Towards Distance Education

(SA = Strongly Agree, A = Agree, UD = Undecided, D = Disagree, SD = Strongly Disagree)

☐ Distance education helps in controlling undue rush to the conventional colleges/institutions.	SA	A	UD	D	SD
☐ Distance education is less expensive mode than that of formal education.	SA	A	UD	D	SD
☐ The degree/diplomas obtained through distance education are not valued as those through the formal system.	SA	A	UD	D	SD
☐ Distance education has a bright future in India.	SA	A	UD	D	SD
☐ Generally weak students join courses through distance education.	SA	A	UD	D	SD
☐ Distance education is more useful for working people to upgrade their qualifications.	SA	A	UD	D	SD

☐ Quality of learning through distance education is not at all inferior to the learning through regular classroom.	SA	A	UD	D	SD
☐ Distance mode of education is not suitable for professional/ technical education.	SA	A	UD	D	SD
☐ Most of the distance learners are careless in their studies.	SA	A	UD	D	SD
☐ Distance education provides opportunities to the persons neglected so far, for higher education.	SA	A	UD	D	SD
☐ In distance education mode, information regarding starting of course is not made available in advance.	SA	A	UD	D	SD
☐ Admissions to distance education courses are free from regional/ state biases.	SA	A	UD	D	SD
☐ Out of those admitted to distance education courses, a very limited number of learners complete the course.	SA	A	UD	D	SD
☐ Previous achievements howsoever low, do not come into the way of pursuing the studies through distance mode.	SD	A	UD	D	SD
☐ Due to lack of sophistication of admission procedure in distance education, many students pursue two courses at a time.	SD	A	UD	D	SD
☐ The self-instructional materials provided in distance mode are easy to understand.	SA	A	UD	D	SD
☐ Generally the study materials are not made available in time to the distance learners.	SA	A	UD	D	SD
☐ The activities included in the self-instructional materials promote habit of independent study.	SA	A	UD	D	SD
☐ The course materials provided are too bulky and burdensome.	SA	A	UD	D	SD
☐ The language used in the self-instructional materials is quite comprehensible.	SA	A	UD	D	SD
☐ The self-instructional materials are effective enough to replace the teacher.	SA	A	UD	D	SD
☐ The self-instructional materials are not adequate enough to prepare for examination.	SA	A	UD	D	SD
☐ The supplementary materials supplied do not encourage further reading.	SA	A	UD	D	SD
☐ The self-instructional materials supplied are generally stereotyped and outdated.	SA	A	UD	D	SD
☐ Self instructional materials of distance education do really help in self-learning.	SA	A	UD	D	SD
☐ Generally the audio/video materials used in distance education are of very poor quality.	SA	A	UD	D	SD
☐ The timing of the Television broadcasts is generally suitable to the distance learners.	SA	A	UD	D	SD
☐ Normally Television broadcast is not watched by most of the distance learners.	SA	A	UD	D	SD
☐ The audio/video materials and Television broadcasting helps in clarifying some of the concepts in the print material.	SA	A	UD	D	SD
☐ Generally schedules of Television broadcasting are not made available in time to the distance learners.	SA	A	UD	D	SD

☐ It is the multi-media instruction which has a far reaching effect on the learning of distance learners. SA A UD D SD

☐ Generally various media employed in distance education lack coordination. SA A UD D SD

☐ Unless the frequency of Television broadcasting is increased distance learning may not be effective. SA A UD D SD

☐ The facility of issuance of audio-video cassettes is not properly extended to learners. SA A UD D SD

☐ There are too many assignments required to be sent by the learners. SA A UD D SD

☐ The compulsion of sending required number of assignments helps the learner to go through the study materials carefully. SA A UD D SD

☐ There is no proper time gap between two assignments to be sent. SA A UD D SD

☐ In general, grading of assignments is not done properly. SA A UD D SD

☐ Generally the assignments are not returned back before the term end examination. SA A UD D SD

☐ Responding to the assignments is a rewarding experience. SA A UD D SD

☐ The remarks made by the counsellor on the assignments are not educative. SA A UD D SD

☐ Sincere attempting on assignments helps in getting good grade in the final examination. SA A UD D SD

☐ Writing assignment is really a very boring task. SA A UD D SD

☐ The system of sending required number of assignments as compulsory for appearing examination should be abolished. SA A UD D SD

☐ The counselling sessions are generally hopeless. SA A UD D SD

☐ Interaction with the counsellors help in developing new insights. SA A UD D SD

☐ Generally counselling sessions are starved of necessary facilities and equipments. SA A UD D SD

☐ Counselling sessions help to remove isolation in studies. SA A UD D SD

☐ Generally the dates of organising counselling sessions are not communicated in advance. SA A UD D SD

☐ The number of counselling sessions are too less to make any impact. SA A UD D SD

☐ Two-way communication between the counsellor and the learner helps to arouse interest in studies. SA A UD D SD

☐ Generally counsellors are inexperienced persons in the field of distance teaching. SA A UD D SD

☐ For distance learners attending counselling classes should be made optional. SA A UD D SD

☐ Generally the library facilities at the study centres are adequate. SA A UD D SD

☐ Generally the study centres are located at inconvenient places. SA A UD D SD

☐ Postponement of counselling classes is a regular feature in the study centres. SA A UD D SD

☐ Study centres are not well equipped to provide adequate information regarding admission to various courses. SA A UD D SD

☐ The staffs of study centre generally cooperate with the students. SA A UD D SD

☐ Generally the study centres fail to provide an institutional climate for distance learners. SA A UD D SD

☐ Generally study centres lack in physical facilities. SA A UD D SD

☐ Generally the study centres are the means of arranging for gossiping. SA A UD D SD

☐ Generally the scheme of examinations is realistically planned. SA A UD D SD

☐ Normally distance learners appear for examinations without much of the preparations. SA A UD D SD

☐ Generally the examination questions in distance education do not test proper understanding of the content. SA A UD D SD

☐ Grades provided in distance education reflect genuine measure of achievement. SA A UD D SD

☐ Distance mode examinations do not promote competitive spirit for better learning. SA A UD D SD

☐ There are too many formalities to be completed before the examinations are held. SA A UD D SD

☐ Unrealistic allotment of the examination centers for distance education cause great inconvenience. SA A UD D SD

☐ It is not feasible to attempt the whole question paper in the given time limit. SA A UD D SD

☐ Delivery of intimation cards at the eleventh hour has a negative effect on achievement of learners. SA A UD D SD

Appendix-2

Distribution of Positive and Negative Statements in the Attitude Scale

Statements	*Total Numbers*	*Sl. Numbers*
Positive	30	1,2,4,6,7,8,10,12,14,16,18, 20,21,25,27,29,31,33,36,40,42,43,46,48,50,51,54,58,62,65
Negative	40	3,5,9,11,13,15,17,19,22,23,24,26,28,30,32,34,35,37,38,39,41,44,45,47,49,52,53,55,56, 57,59,60,61,63,64,66,67,68,69,70

Appendix-3

Matrix of Coefficients of Correlations between the Scores of Eight Domains and Total Scores on Attitude Scale

Domains	*I*	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*	*Total*
I		0.32	0.46	0.35	0.37	0.34	0.28	0.37	0.63
II			0.40	0.33	0.29	0.31	0.28	0.37	0.53
III				0.44	0.49	0.48	0.44	0.50	0.77
IV					0.39	0.46	0.48	0.32	0.65
V						0.58	0.45	0.53	0.75
VI							0.67	0.51	0.77
VII								0.47	0.74
VIII									0.74

Women in Higher Education

Professor K. Sudha Rao, Head, Higher Education Unit, National Institute of Educational Planning and Administration (NIEPA) delivered the convocation address at the Annual Convocation of the DAV College for Women, Amritsar. She said, "Women's career roles are still deemed secondary to their roles as wives and mothers in Indian Context. Because Child-bearing/rearing years often coincide with the years when academics are expected to establish a strong research record, the resultant outcome turns out to be that women remain in the lower echelons of academic life. Yet the brighter side of the picture is probably that higher education is one of the very few sectors where employment of women is not only accepted, it is rather regarded as respected and of course realised as convenient to both men and women and also society at large." Excerpts

DAV institutions numbering around 700 have done pioneering work in the education sector. It would not be an exaggeration to call them as the leader of women's education. DAV institutions during those days when opposition was strong, took initiatives and provided support for educating girls and women which is an indication of not only commitment but also farsighted vision of nation building. The mission and goals that we read today for nation building in the policy and plan documents had found their place hundred years ago in the DAV documents. It is due to efforts of those visionaries that today atleast some educated women are seen in important positions.

Inspite of the constitutional obligations, legal provisions, central and state level policies and programmes, affirmative actions, the benefits are availed of by a small number of women and that too by the privileged class.

The progress made since Independence by the higher education system, though attractive, is yet revealing. No doubt, today, we have more than 1200 institutions out of 9200 and odd colleges meant exclusively for women in different disciplines, levels and professions. Institutions not only cater to Arts, Humanities and Sciences but also to technical and professional education, yet sizeable number of women are still to enter into higher education. Though statewise enrolment of women in higher education indicates 34.1% of the total enrolment in 1995-96, which of course is a target achieved as per the policy and plan, their number in Arts, Humanities, Science, Commerce and Education degrees have been predominantly higher in comparison to that in the Engineering and Technology, Law, Agriculture, Veterniary Science, Pharmacy, Medicine and such other disciplines. In Education alone 56.2% are enrolled and 44.6% are in Arts. These two appear to be the universally accepted disciplines amongst women. Though the number shows increment since 1950-51 to 1995-96 in absolute terms, when compared with the total women population it is negligible. Women's career roles are still deemed secondary to their roles as wives and mothers in Indian Context. Because Child-bearing/rearing years often coincide with the years when academics are expected to establish a strong research record, the resultant outcome turns out to be that women remain in the lower echelons of academic lifes. Yet the brighter side of the picture is probably that higher education is one of the very few sectors where employment of women is not only accepted, it is rather regarded as respected and of course realised as convenient to both men and women and also society at large. Surprisingly, though large percentage of women are employed in the teaching profession, proportionate number is not reflected in the percentage of women in the decision making positions.

A point to be noted at this juncture is inspite of the fact that most university staff aims at treating all students fairly, evidence suggests that many, both male and female, inadvertently treat male and female students differently. "Subtle biases are often so entrenched that they pass unnoticed". The immediate effect of such bias is to "leave women students' feeling less confident with regard to both their ability and their place in the higher education sector"; a far more reaching effect is the impoverishment of society as a whole when "the experiences, values, beliefs and needs of half the population" are ignored.

Radical changes have taken place not only in the shape of higher education system and the scale and character of institutions in India but in the very perception of policy makers, planners, administrators, employers, regulatory bodies, beneficiaries, politicians and the society as a whole. The universities that were considered the seat of higher learning for pursuit of knowledge and excellence, for developing critical and creative minds are viewed as institutions where education is to be geared towards jobs (kindly note the difference between the employment and job). Higher learning that was considered as a privilege of those who were meritorious, excelled in their performance in lower levels is being challenged as "higher education to be one of the fundamental rights". This change in per-

Educatio in India — 3

Enrolment in Engineering/Technology/Architecture by Levels and Sex

All India

Level	1971		1981		1986		1991		1997	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	878	45	1,995	169	2,207	405	NA	NA	NA	NA
Post-Graduate	6,704	186	10,792	567	11,229	1,271	NA	NA	NA	NA
Graduate	84,025	820	1,11,064	4,942	1,69,388	13,061	2,15,081	26,287	2,79,643	48,756
Total	91,607	1,051	1,23,851	5,678	1,82,824	14,737	NA	NA	NA	NA

Enrolment in Medicine* by Levels and Sex

All India

Level	1971		1981		1985		1987	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	392	106	338	118	348	156	488	234
Post-Graduate	5,517	1,872	11,930	3,129	14,782	4,061	14,844	4,344
Graduate	66,296	16,764	81,197	24,712	80,524	33,736	82,259	37,805
Total	72,205	18,742	93,465	27,959	95,654	37,953	97,591	42,383

**Medicine includes Allopathy, Homoeopathy, Ayurveda and Unani.*

Enrolment in Agriculture and Forestry by Levels and Sex

All India

Level	1971		1981		1985		1987	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	896	25	2,030	119	1,842	176	1,991	232
Post-Graduate	3,975	106	6,773	432	6,711	717	6,997	887
Graduate	20,063	46	30,140	1,085	30,105	1,741	32,750	2,243
Total	24,934	177	39,843	1,636	38,658	2,634	41,738	3,362

Source : Manpower Profile India Year book 1998, Institute of Applied Manpower Research, New Delhi.

Enrolment in Veterinary Science by Levels and Sex

All India

Level	1971		1981		1985		1987	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	129	1	334	6	404	6	333	11
Post-Graduate	691	7	1,091	22	1,180	51	1,228	84
Graduate	5,019	60	5,650	224	6,695	490	7,071	632
Total	5,839	68	7,075	252	8,279	547	8,632	727

Enrolment in Education (Teacher's Training) by Levels and Sex

All India

Level	1971		1981		1986		1991		1997	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	112	43	404	194	658	393	NA	NA	NA	NA
Post-Graduate	2,042	1,068	3,185	3,465	3,818	3,121	NA	NA	NA	NA
Graduate	34,798	21,234	36,340	31,509	44,604	35,772	51,453	40,764	66,018	50,023
Total	36,952	22,345	39,929	35,168	49,080	39,286	NA	NA	NA	NA

Enrolment in Others* by Levels and Sex

All India

Level	1971		1981		1985		1987	
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*
Doctorate	527	64	621	169	802	263	1,062	420
Post-Graduate	8,941	1,649	18,173	4,147	18,377	4,462	18,612	4,987
Graduate	86,228	6,558	1,90,515	35,513	2,11,014	30,836	2,12,047	35,872
Total	95,696	8,271	2,09,309	39,829	2,30,193	35,560	2,31,721	41,279

**Others include Business Management, Journalism, Law, Library Science, Music and Dancing, Physical Education, Oriental Studies, Social Work and Others.*

ception of people added with the recent policy changes like industrialization, privatization, globalization, liberalization, technology policy etc. demands restructuring of the very structure, functions and structure — function relations of the higher education system. The developments in technology have altered the delays caused by time and distance, making those things possible that were hitherto impossible for a developing country like India. Diversification and decentralization have become unavoidable for the very survival.

Much is said, and more is in the offing, with regard to women in terms of historical, religious, lingual, emotional, psychological, physical, biological, sociological, ethical, religious and cultural interpretations. Those factors reveal that the gender differences that exist in the higher education system are not mere chance factors, rather it is the way in which the system organised itself to promote or restrict women in the system. As rightly identified by one of the eminent educationists in one of his convocation addresses in the country, "if at all the higher education system aims at providing access and retention of women it needs accommodation of different diversities in the Indian context. The diversities are : the diversity of learners — which accommodates women of different age groups and different backgrounds; diversity of goals — women having different motivation and objectives to be brought under the college structure; diversity of context — women having different time frames and different study plans are to be promoted, and the diversity of locations — women need different places to learn than formal colleges alone". If at all colleges aim at giving equal opportunities to women and ensure women participation in the national development it is time that women resource development be given priority.

It is known that the standards set and the culture developed in the college determines the 'push and pull' factor for women. It is believed that the large number of women in the campus, not only depicts open, neutral and facilitating culture of the colleges and universities but also the commitment of intelligent and farsighted administrators in the mission of national development.

Keeping these in view, I would like to sum up, by raising few important questions for introspection of one and all

— Why some universities are able to achieve and not others though all universities are autonomous?

— Why efforts succeed in some colleges and not in others though all colleges of a particular university in India are affiliated to the same university?

— Why in the same college some departments succeed and not all?

— Why in the same department some women are able to achieve and not all?

— Why success come only sometimes and not all times?

— Why men in some institutions recognize women as equals and not in others?

— Above all, why is that some men and women are able to play pro-active role in contributing to the gender neutralizing culture in comparison to others who promote genderizing?

— Last but not the least, why those men and women who are victims of the genderized process while they are to be the beneficiaries, promote genderization when they reach the decision making positions?

Introspection and brainstorming is essentail to find answers to these questions. Time pressure for women is more in comparison to men in the Indian ethos as she has to shoulder several responsibilities as daughter, wife, mother, mother-in-law, grandmother in addition to being a professional. Each one is equally important to maintain an equilibrium in the society.

(Contd. from page 9)

rion may be based on performance in group discussions, contribution in extra-curricular activities of the department and institute and participation in field workshops.)

The performance report must conclude with the award of a grade, e.g. 'Excellent', 'good' and 'fair'. This certificate will make a student confident at the time of his/her facing an interview because of the awareness of his own weak and strong points. It will also help him in choosing a career in a better way. Further, the employer/interviewer will face less difficulty in selecting him/her with less risk. In non-autonomous institutes/colleges, this certificate may be issued by the classteacher which may be countersigned by the Head of Deptt. and Director/Principal.

The performance report should be made a part of the marksheet.

It may be noticed that the ideas conveyed in this article have a greater emphasis on relevance and practicability and have been consciously sheltered from dull and impracticable theorizing.

[My discussions with Professor P.B. Lal, my colleague in the Deptt. of English, and with Director, Dr. U.S. Pathak, I.E.H.E., Bhopal have helped me in confirming the efficacy of these methods of teaching.]

Scientists Write for Students

Eleven eminent scientists are at the fulcrum of an effort to bring science, intelligibly and interestingly, to every doorstep.

Men of brilliance—like Govind Swarup, Raja Ramanna, Jayant Narlikar, V.G. Bhide, Vijay Bhatkar—have turned their minds to write books for the student and the layman on topics ranging from the history of stars to the principles behind the cloning of Dolly.

Already, the first set of six illustrated books is out and will be made available country-wide to students in schools, varsities and medical and engineering colleges under a minimum price tag. The authors aim to bring out a new set of books every six months.

The language of the books has been tailored for reach and acceptability for those who don't have a science background. Though the books are in English and Marathi, they are simultaneously being translated in other Indian languages.

"Science can be better understood in one's own language," says internationally acclaimed scientist, Dr. Jayant Narlikar, the Director of Inter University Centre for Astronomy and Astrophysics.

He traces the decline of public interest in science to the dearth of general books on it. "Very few people are writing science books," he says. "Among them still less have the art of presenting the subject as an interesting reading material for an average person."

Narlikar voices every student's feeling. Textbooks in schools are so dreary, he holds, that the instinct to explore science and mathematics dies. "There is too much stress on knowledge and less on comprehension," he remarks. An area which the books focus on.

Dr. V.G. Bhide, former director at the National Physical Laboratory, who is the chief of editorial panel comprising the scientists who are writing and reviewing the books, believes that students bear the brunt of the loopholes in our system of science education. So, children emerge from schools and colleges devoid of curiosity and innovativeness and even self-confidence, he says.

Bhide calls their effort a "multifaceted mass movement to improve science education". The cornerstone of this movement, he details, is the setting up of an Exploratory, that, as the name implies, will stress exploration of knowledge for learning science.

A young IIT graduate, Shekhar Pathak, is spearheading the scientists' campaign by printing and publishing the books.

But, due to their extremely low price, some publishers have disfavoured the books fearing stiff competitions for their publications. Hence, these books are as yet not on the shelves of bookstores.

Yet, the scientists continue to take time out from their researches and work on the project with virtually no monetary returns. Pathak too has resolved to approach schools over the country with subscription offers and plans to organise popular events and lectures by eminent scientists.

Chemistry and Environment

The International Congress of Chemistry and Environment will be held in Indore in December, 1999. Focal theme of the Congress will be : "Science and Technology for Prevention and Management of Environmental Emergencies".

The Congress is in response to United Nations International Decade for Natural Disaster Reduction. Secretary General of the UN Mr. Kofi Annan has already drawn attention to the problem of environmental emergencies which threaten to assume alarming proportions.

The Congress will evolve its own strategy taking into consideration regional as well as world wide effects of degradation of environment.

1. To advance and promote the cause of research in the field of chemical sciences, environmental sciences and industries.
2. To provide opportunities for wide ranging discussions and critical debates on recent experimental research and theoretical ideas.
3. To develop a better understanding of chemical and environmental research for application to economic, social & industrial upliftment of country and the world.
4. To strive for strengthening National & International Cooperation and Contacts amongst the teachers, students, scientists & leaders of world & to arrive at common consensus & programme to minimize Pollution.

Industrialists, Professors, Lawyers, Judges, Political thinkers, Journalists, Environmentalists, Scientists and Research Scholars working in Colleges/Universities, Industries, Government, Public Sector Undertakings, Research & Development Organisations & Laboratories etc. may participate in the Congress.

The Core Programme of the Congress will be :

(a) Scientists from different disciplines will come together to present papers and participate in discussions for evolving preventive and management strategies.

(b) Formation of study groups for mapping of vulnerable areas in different countries which are prone to natural disasters.

(c) The research studies and lectures may include disasters such as earthquakes, volcanic activity, wildfires, land slides, avalanches, floods, drought, hailstorms, tornadoes, hurricanes, winterstorms and distribution of populations in hazardous zones and their social consequences.

(d) Role of global warming in natural disasters. Global warming due to natural causes and human activity.

(e) Researches regarding El Nino/La-Nina — causes and effects.

(f) Disaster Zones and vulnerable spots in the Himalayas; Floods in Yangtze river (China) and Eastern India.

(g) The human factor in environmental emergencies.

The International Congress is being organised under the auspices of *Research Journal of Chemistry and Environment*. This International research journal deals with Chemical Sciences as well as Environmental Sciences. It is also proposed to hold an Exhibition and to publish a Souvenir on this occasion.

Besides the papers submitted for focal theme, papers may also be presented on the following broad classifications under different sections :

1. Hazardous Chemicals, their Waste Utilisation and Pollution Minimization.
2. Water Pollution, Air Pollution and Vehicular Pollution.
3. Law and Environment.
4. Environmental Impact Assessment, Environmental Pollution Management.
5. Industrial Products and Industries causing pollution with increase of green house gases; efforts to minimize them.
6. Any research related to theoretical chemistry — Inorganic/Organic/Physical/Analytical/Instrumentation/Pharmaceutical/Polymers etc.
7. Any research related to Industries and Industrial Products like-Drugs/Pulp & Paper/Petrochemicals/Oil and Natural Gas/Rubber/Paints/Textiles/Plastics/Chemicals/Fertilizers/Explosives/Lubricants/Refrigerants/Detergents/Pesticides/Refineries/Cosmetics/Cement/Sugar/Distilleries/Dyes/Electro-Chemicals etc.
8. Energy, Power, Renewable & Natural Energy Resources, Thermal & Atomic Power Plants & Pollution.

All papers must be of original research work and should not have been published elsewhere. Last date for receipt of papers is 31st July, 1999. Abstracts should be sent in advance latest by 31st March, 1999. The full paper should contain Abstract, Introduction, Experimental Details, Results and Discussion, Conclusion and References. Papers should be restricted to maximum 10 pages of typed matter (Double space).

Further details may be had from Dr. Shankar Lal Gargh, Director, International Congress of Chemistry and Environment, Sector A/80, Scheme No. 54, Vijay Nagar, A.B. Road, Indore-452010 (M.P.) India, Phone : 552837, 552966 Cable : Vighyan Fax : 91-0731-552966, 558866 E-Mail : CHEMJYOT@bom4.vsnl.net.in

Punitive Measures for Ragging

The Assam government has drawn up strict punitive measures, including imprisonment, monetary fine and expulsion from the concerned educational institution, for students indulging in ragging in the state.

The state assembly recently unanimously passed the Assam prohibition of ragging Bill, 1998, stating that no person shall commit, abet, propagate or participate in ragging in any educational institution.

The Bill provided that violators be punished with imprisonment for a term which may extend to six months or with fine up to Rs. 10,000 or both, expulsion from the concerned educational institution for one academic session and that he or she shall not be admitted in any other educational institution during that period.

The authority concerned shall notify in at least one leading newspaper the description along with the offender's name, father's name and permanent address.

The Bill made the head of the educational institution or the person managing the institution responsible for taking immediate action on receipt of complaint of ragging and the action so taken shall be final and binding on the student concerned.

Deshmukh Memorial Lecture

Law Commission chairman Justice B.P. Jeevan Reddy called for more self-financing institutions in higher education as the government was not in a position to increase allocation of funds for the sector. He was delivering the second Dr. C.D. Deshmukh memorial lecture, 'The State of Higher Education in India', organised by the Council for Social Development in Hyderabad recently. He said while the enrolment in the universities and their affiliated colleges was on the rise, the government's allocation for the education sector was on the decline. Stating that this had resulted in acute resource crunch in the universities, he said : "the time has come to seriously think of self-financing institutions. Only those who can afford education would then go to these institutions."

The chairman of the Law Commission said globalisation policies would reduce the role of the State in social sectors like education and health and the higher education sector would be left to fend for itself.

Underscoring the need for all the universities to generate adequate sources of income on their own, Justice Jeevan Reddy was of the opinion that the fees in the colleges, which remained same for several decades, should also be enhanced. "The students ought to bear a reasonable portion of the expenditure incurred on them." he remarked.

Emphasising the need for improving standards of higher education in the country to meet the global competition, Justice Jeevan Reddy said discipline and dedication among students, autonomy and adequate funds were needed for achieving higher standards.

On autonomy, the chairman of Law Commission said that appointment of a vice-chancellor for a university should totally be free of political considerations.

The selection of vice-chancellor should be made by a committee consisting of academicians and the government's role should be limited to appointing the person recommended by the committee, he added.

The universities also must have a certain degree of autonomy in the matter of choosing syllabus, recruitment of teaching and non-teaching staff, admission of students and the standard of education imparted.

He observed that reservations in the education sector would not lower the standard of education as the admission was not the end of education and all the students would have to pass all the subjects after joining a course.

Vice-chancellor, Osmania University, V. Ramakistayya, president of the Council for Social Development Muchkund Dubey and others also spoke on the occasion.

Networking Lucknow Libraries

A seminar on Application of Information Technology in Libraries/Information Centres and Networking of Libraries of Lucknow organised by U.P. Library Association was inaugurated by Prof. P.N. Kaula Ex-president, Indian Library Association. More than sixty library and information science professionals from libraries/information centres of Lucknow participated.

Prof. Kaula termed the present age as age of information technology and said that information technology has not only revolutionized libraries and information centres but also left its impact on every sphere of human activity. He traced the development of various library networks such as Indonet, Vidyagiri, Inflibnet, Calibnet, Bomnet, Hydernet, Delnet etc. in the country and emphasied that creation of library networks has become a necessity.

Earlier Mr. R.K. Srivastava, Secretary, U.P. Library Association, Lucknow apprised the participants about the need for creating the proposed network of libraries/ Information centres namely Lucklibnet on the lines of those already functional in Delhi, Calcutta, Madras, Bombay, Pune, Hyderabad and Ahmedabad. Dr. Roshan Raina, Vice-President, U.P. Library Association welcomed the Guests and stressed upon the need for pooling the rich resources available in libraries/Information centres of Lucknow through a computer network.

The inaugural session was followed by business sessions. During the first session R.K. Srivastava presented a paper on state of art of automation activities in libraries/information centres of the city on the basis of preliminary survey carried out by him. Participants representing various libraries shared their experiences in library automation and on the whole a consensus among them emerged for creating a network of libraries/ information centres in Lucknow without any further delay.

During the second session Roshan Raina, Librarian, Indian Institute of Management, in his theme paper, highlighted the various aspects to be taken care of while establishing a network of libraries. Shymala Saxena and Shivani Tewari of CDRI, Lucknow in their paper stressed that such a network should be established in a phased manner and identified the various stages of development. While Anjali Gulati, I.T. college, Lucknow discussed the 'Network Architecture' of proposed network and other hardware aspects, Rochna Srivastava of the same college identified the various services being rendered by such networks. R.K. Srivastava suggested that as a first step towards creation of proposed network, a meeting a heads of the institutions and the librarian/information scientists of all the institutions supposed to participate in proposed network should be called immediately so that a consensus among Heads of the Institutions for participating in such a network may emerge.

Bipin Kumar, Librarian, British Library, Lucknow chaired valedictory session and summed up the day's proceedings. It was decided that a sub-committee should be formed by the U.P. Library Association, Lucknow to monitor the implementation of recommendations of the seminar.

MDU Retain Boxing Championship

Hosts Maharishi Dayanand University (MDU), Rohtak retained the team championship of the 39th all India Inter-University Boxing Championship claiming six golds in a total of 12 categories.

Pugilists of Punjabi University, Patiala, took the second spot with gold medals in flyweight, middle weight and light heavy weight categories.

Kurukshetra, Kumaon, and Osmania Universities won gold medal in the super heavy weight, bantam weight and light flyweight categories respectively.

About 300 young boxers took part in the tournament.

The Maharishi Dayanand University won the team title for the third successive year, when they secured 18.5 points. They were followed by Punjabi University with 12.5 points.

Kurukshetra University finished third with 7.5 points.

Diploma Course in Primary Education

A two-year diploma programme in Primary Education for School Teachers would be jointly launched by the Indira Gandhi National Open University and the National Council for Educational Research and Training next year.

This programme would initially be launched in the Northeastern states, Sikkim and West Bengal. Professor Khan Vice Chancellor of the Indira Gandhi National Open University, mentioned that the largest percentage of untrained teachers were from the Northeastern states of the country. It would be practically impossible to reach out to this large number considering the present teacher training facilities in the region. Distance education was the only alternative through which this large segment could be provided with quality training input.

Awards for Maths Students & Teachers

The Mathematical Science Trust Society (MSTS) and C.V. Kapur Educational Foundation have announced the following Awards :

1. Mathematics Olympiad Awards : Each student who qualifies on the basis of Regional Mathematics Olympiad (RMO) to appear in the Indian National Mathematics Olympiad (INMO) receives this award through the regional co-ordinator of his RMO. The Regional co-ordinators are requested to send the names, addresses and marks obtained to MSTS as soon as the result are decided, so that prizes can be sent to Regional co-ordinators to be given to the students on the day of the INMO examination. About 4000 prizes have already been given under this scheme.

2. Best KVS Mathematics Students Awards : The student of a KVS (with more than 1000 students) who obtains the highest percentage of marks in the combined result of 10th and 11th class examinations is eligible for this prize. Each Principal of a KVS is requested to send the name and address of his or her best student to MSTS for examinations of 1998 onwards. The prizes will be sent to students through the Principals of their schools.

3. Distinguished Mathematics Teacher Awards : Five to ten teachers recommended by every mathematics teachers association in the country will be given these awards every year. The association will select the teachers out of nominations received by them from their members. The awards will be sent to the associations which will give these at the time of their academic functions.

4. Distinguished Teacher Awards : These will be given to college and university teachers of any subject selected by the Principal or Vice-Chancellor. Each Principal/Vice-Chancellor is requested to nominate one person from his or her college or university every year.

Further details may be obtained from Prof. J.N. Kapur, MSTS, C-766, New Friends Colony, New Delhi-110 065.

Telugu Varsity Convocation

Dr. Kapila Vatsyayan, Director, Indira Gandhi National Centre for Arts said there was a close relationship between the multimedia aspects of Indian architecture and new technologies in the field of information and computers. She was delivering the Sixth Convocation address of the Potti Sriramulu Telugu University. Dr. Vatsyayan said that this aspect of inter-relationship was remarkably suited for multi-media programming and evolution of software.

Stating that Andhra Pradesh was endowed wth rich cultural heritage, she exhorted the students to take up textual criticism of great ancient manuscripts in their research work and bring out properly annotated, collated and definitive editions with modern commentaries.

The complexity of a plural heritage in thought and language of this land would affect and permeate the nature of artistic expression among proud inheritors of the State, she said.

Telugu University honoured six eminent persons on the occasion by conferring D Litt degree *Honoris Causa* at the convocation. University Chancellor and Governor C Rangarajan conferred the degrees on S.V. Rama Rao (art), Janamaddi Hanumat Sastry (literature), S.P. Balasubrahmanyam (light music), T. Sarada (films), S. Sadasiva and Dwivedula Visalakshi (literature).

As many as 343 students from various faculties received degrees and certificates. Of them, 21 received gold medals for their outstanding performance in respective fields.

Earlier, University Vice-Chancellor Prof. Nayani Krishnakumari, in her report, urged the government to allot land at Madhapur and sanction budget for construction of general campus for the university.

She said that the university was entrusted with the task of recording, documenting and preserving the important events in the lives of eminent Telugus who have contributed to the glory of Telugu people.

Under the scheme, the university has so far completed documentation of the life and achievements of 53 eminent Telugus.

The School of Folk Arts and Tribal lore of the university had collected folk and tribal material in Warangal district. It has printed nine volumes on tribal culture and is trying to establish an archives centre, she said.

IGNOU Study Material

The Indira Gandhi National Open University has been successful in sending study material to its seven lakh students that reached well before the start of the session.

In all these years since its inception in 1985, the university was failing in its duty of sending study packages on time, resulting in vexation for students. The removal of this blemish is attributed to its Vice Chancellor, Professor A.W. Khan's constituting a Task Force for this purpose immediately after he took over in June, 1998.

This would well serve as an example for all distance education universities of the country, since invariably all of them deliver study material not less than 2-3 months after the resumption of the course.

The study material has been despatched well before the session, which is to start in January. The material used to reach as late as March and April for examinations scheduled in June.

The Vice Chancellor said the university's priority was on the learner support system in which timely supply of study material was vital. "The process was completed in three months starting October and seven lakh packets were delivered," he said. A brainstorming session would be held to decide on a mechanism for providing the packages on time.

An official said there were limitations in readying the study packets — about 1,500 a day — since staff was limited and that completing 500,000 packages took an inordinately long time. Further, there were delays in the printing of material earlier, which has been done away with this time.

Professor Khan has also drawn up a second Task Force for "Education to the Disadvantaged", for fulfilling the university's object of reaching the socially and economically disadvantaged, the geographically backward and the disabled people.

The Task Force consisting of NGOs and representatives of the National Commission for Women is entrusted with identifying programmes relevant to people in addition to the existing programmes and for education for the disabled.

The Task Force is expected to reach at concrete proposal in a year's time.

Indian History Congress

The Governor of Punjab, Lt-Gen. (retd) B.K.N. Chhibber, inaugurated the 59th session of the Indian History Congress at Punjabi University, Patiala and urged historians to draw a code of conduct for themselves to ensure that history was not coloured by vested interests.

Delivering the inaugural address at the congress, the Governor said the job of a historian became very difficult when vested interests tried to colour history according to their own perception of the events.

. He said in such an atmosphere when the responsibility of projecting and reflecting history for future generations lay on their shoulders they should come out with the most objective historical accounts. He said if the congress was able to draw up a code of conduct, historians would be able to discharge their duties objectively without succumbing to pressure from any lobby.

Delivering the presidential address on "Identity Formation and Nation States" Prof. Parthasarathi Gupta of Delhi University, said the unlovely features of nationalism — illiberalism, exclusivitism and anti-humanism — were responsible for the resultant fascism in Germany and Italy. He said, "We should remember these examples as a warning as similar tendencies are lurking beneath the surface in India."

Giving an example of how Indian history had been distorted in the past, Professor Gupta said unscientific historical hypothesis were part of the curriculum at school level.

He said Indian history did not end on August 15, 1947 and over the past 50 years India, Pakistan and (since 1971) Bangladesh had seen violence but had also demonstrated a fair degree of determination and success in trying to make up for the lag in development created by two centuries of colonialism.

Earlier, while welcoming the Governor and the participants to the congress, the Vice Chancellor of Punjabi University, Dr. Joginder Singh Puar, highlighted the role of the university in the development of history as a subject and a displine. He said the university had published over 250 books on various periods of regional, national and world history.

Later in the evening, Prof Satish Chandra delivered the S.C. Mishra Memorial Lecture and spoke on "Modern Historical Writing in the 17th and 18th centuries". Professor Chandra also inaugurated an exhibition of paintings, drawings and graphics at the museum and art gallery in the university. .

Congress Local Secretary Parm Bakshish Singh said the congress had been attended by 500 delegates from India and abroad. He said among the important historians presenting papers on the occasion were Prof V.N. Duta, Prof. W.E. Bagley, Dr. Kapila Vatsyayan, Prof. K.S. Shrimali, Prof. Nariani Gupta, Prof. J.S. Grewal, Prof. Irfan Habib and Dr. Bipin Chandra.

Mashelkar Calls for Knowledge Revolution

India needs a "Grey or Knowledge revolution" to face the 21st Century and to achieve "exponential growth" in information technology. For this every citizen must become a "knowledge worker," according to Dr. R.A. Mashelkar, Director-General, Council for Scientific and Industrial Research (CSIR).

UNDER MODEL INSTITUTE OF EDUCATION AND RESEARCH

MODEL INSTITUTE OF ENGINEERING AND TECHNOLOGY (MIET)

Camp Office, MIER Campus B C Road, Jammu 180001

STAFF APPOINTMENTS

POST	DISCIPLINE
1. PROFESSORS	Computer Science & Engineering, Electronics & Communication Engineering and Electrical Engineering.
2. ASSISTANT PROFESSORS & LECTURERS	Computer Science & Engineering, Electronics & Communication Engineering , Electrical Engineering and Mechanical Engineering.
3. LECTURERS	a)Engg. Mathematics, Engg.Physics, Engg. Chemistry, Engg. Economics b) English

Eligible candidates can send their applications along with complete Bio-Data within 30 days from the date of publication of the notification to the Office of Director Model Institute of Education & Research, B.C. Road Jammu, 180001. Qualifications, Grades and Service conditions will be same as prescribed by University of Jammu/AICTE. Higher start can be considered for highly qualified and experienced persons. Retired teachers up to the age of 63 and those about to retire can also be considered for appointment on contract basis.

MIET/Engg-12/98

DR. ARUN K. GUPTA
DIRECTOR

MIET - APPROVED BY AICTE GOVT. OF INDIA AND J&K GOVERNMENT

TATA INSTITUTE OF SOCIAL SCIENCES
(Deemed University)
Post Box No. [illegible] Deonar, Mumbai [illegible]

ANNOUNCES ADMISSION TO THE FOLLOWING ACADEMIC PROGRAMMES - 1999-2000

1. **M.A. IN SOCIAL WORK** with specialisations in (i) Criminology and Correctional Administration (CCA), (ii) Family and Child Welfare (FCW), (iii) Medical and Psychiatric Social Work (MPSW), (iv) Social Welfare Administration (SWA) and (v) Urban and Rural Community Development (URCD). Cost of application form Rs. 250/-.

Eligibility: A First Bachelor's Degree of minimum three years duration in (i) Arts / Commerce / Science / Engineering with a minimum aggregate marks of 45% (35% for SC/ST); (ii) Law / Medicine / Nursing with a minimum aggregate marks of 50% (40% for SC/ST), or the equivalent grade.

2. **M.A. IN PERSONNEL MANAGEMENT AND INDUSTRIAL RELATIONS**
Eligibility : A First Bachelor's Degree of minimum three years duration in (i) Arts / Commerce / Medicine / Law / Nursing with a minimum aggregate marks of 50% (40% for SC/ST) or the equivalent grade; (ii) Science / Engineering with a minimum aggregate marks of 55% (45% for SC/ST). Cost of application form Rs. 250/-.

3. **MASTER OF HEALTH ADMINISTRATION**

4. **MASTER OF HOSPITAL ADMINISTRATION**

Eligibility: A First Bachelor's degree of minimum three years duration in any discipline with a minimum aggregate marks of 50% (40% for SC/ST). Age under 45 years, relaxable only under special circumstances. Preference will be given to person/s holding administrative position in health sector. Cost of application form Rs. 250/-.

5. CERTIFICATE IN SOCIAL WELFARE ADMINISTRATION (Full-time one Semester : June 28, 1999 to October 27, 1999).

Eligibility : A Bachelor's Degree in any discipline with a minimum of three years experience in the field of social welfare/development programmes. Cost of application form Rs. 20/-.

Last dates for receipt of completed applications at the Institute by hand or by post (i) **26.2.1999** for M.A. in Social Work, and Certificate in SWA (ii) **29.1.1999** for M.A. in P.M. & I.R. (iii) 30.3.1999 for Health and Hospital Administration (Extended).

For details see advertisement appeared in the Indian Express (Mumbai) on 13th December 1998 and the Employment News dated 26.12.98 or write to the **Assistant Registrar (Academic)** or Contact on phone: 556 3289 to 96. Fax 22-556 2912.

Place: Mumbai
Date: 3.1.1999

Dr. S.K. Bandyopadhyay
REGISTRAR

He said that thanks to the Green Revolution the country had attained "self-sufficiency" in foodgrains production and in certain cases there was a surplus too.

Through the White Revolution, it succeeded in increasing the milk output — with the annual milk production at 74 million tonnes now, India occupied the first spot, relegating the U.S. to second place.

Then came the "Blue Revolution" which made the world take cognisance of India's technological prowess.

Now, at the threshold of the next millennium, what the country should do was to launch a "Grey Revolution." Dr. Mashelkar, also Secretary, Department of Scientific and Industrial Research, said India had the indomitable spirit to succeed in whatever it attempted.

He was speaking on the occasion of the inauguration of the Param-10000 supercomputer, installed at a cost of Rs. 1 crore, in the premises of the Amrita Institutions at Ettimadai near Coimbatore.

He said the Param supercomputer was a "story of inspiration." When India was denied the Cray supercomputer by the U.S. "it resolved to develop an equivalent within a timeframe." The Centre for Development of Advanced Computing (C-DAC) at Pune, took up the challenge. At a cost of Rs. 36 crores and in three years, C-DAC accomplished the job, creating "Param." He said that only when India was denied something, did it "perform." The creation of Param was one such instance.

Dr. Mashelkar said that in future knowledge would play a vital role as there would be "knowledge market, knowledge corporation, knowledge worker, etc." The future wars would be fought not with arms and ammunition, but on the basis of information and knowledge.

Therefore, for launching the "Grey Revolution," every citizen must become a "knowledge worker." The implements for that goal should be innovation, passion and compassion.

SNDT Varsity Convocation

"There are only five women's universities in the country," lamented the chairperson of the University Grants Commission (UGC) Ms. Armaity Desai at the annual convocation of SNDT Women's University, Mumbai.

She pointed out that even though the enrolment of women in higher studies had gone up from 9.3 per cent on the eve of Independence to 34.1 per cent at present, the type of degree courses pursued by women did not always yield careers. She said women's enrolment in the areas of law, engineering and technology was very low. Ms Desai said that the UGC's attempt was to introduce professional and application contents in humanities and sciences courses, on the one hand, and to increase access for women to technology and engineering courses, on the other.

"But increase in women's enrolment in colleges and universities will be possible only if adequate infrastructure is available. There should be separate facilities for women students in co-education campuses and provision of women's hostels," she emphasised.

Ms. Desai said that the UGC was unable to meet the great demand for hostels because of paucity of funds. "An allocation of Rs. 5 crore a year on this scheme is barely enough for a country as vast as ours. Girls drop out of schools after the seventh grade because their families are not willing to send them by buses to institutes located outside their villages. Therefore, there is a need to set up hostels, first at the district headquarters and eventually at the taluka level," she said.

Ms. Desai congratulated SNDT University for its "significant contribution, not only to women's education for which it was set up but also to the entire field of higher education."

Ms. Desai was the chief guest at the 48th convocation of SNDT University. Governor of Maharashtra and Chancellor of the university, Sh. P.C. Alexander presided over the function. About 7,000 students were awarded degrees, including 27 doctorates.

AIU News

Prof Allauddin Ahmad — AIU President 1999

Prof Allauddin Ahmad, Vice Chancellor, Jamia Hamdard has assumed office of the President of Association of Indian Universities for the year 1999. Born on 15th January 1936, Prof Ahmad had his education at the Universities of Bihar, Missouri (USA) and Patna.

An able administrator, Prof Ahmad was the Vice Chancellor of Sher-e-Kashmir University of Agricultural Sciences and Technology, Srinagar (J&K), 1982-1991 and Deputy Director General (Education), ICAR from August 1991 to January 1995. In February 1995, he took over the reins of Jamia Hamdard.

An outstanding scholar, Prof Ahmad won Gold Medal for premium position in B V.Sc. & A H at the University of Bihar. He received 'Scroll of Honour' from the Indian Council of Veterinary Medicine (1976) and Indian Pharmacological Society (1988). He was awarded a 'Plaque' for his contribution to the development of Pharmacology by Indian Pharmacological Society (1993). He received international felicitation and award for outstanding contribution in the University Administration during World Environment Congress in 1977.

A dynamic professional, Prof Ahmad is a life member of the Indian Pharmacological Society and the Indian Science Congress Association. He has also been a member of the Indian Public Health Association (1973-78), Association of Physiologists and Pharmacologists of India (1966-82) and the American Veterinary-Medical Association (1961-73). He was the chairman of the ICAR Scientific Panel on Agricultural Education (1988-91) and the President of the Indian Agricultural Universities Association (1988-89). He was also a member of the Council of Association of Commonwealth Universities (1996-98) and the Vice Chairman of the International Forum for Science, Technology and Human Resource Development. He has been a member of the INSA National Committee of Pharmacology (1986-88), NCERT and the Board of Directors of the Educational Consultants India Ltd. He was the founder treasurer of National Academy of Veterinary Science and held various offices in the Indian Pharmacological Society.

Widely travelled Prof Ahmad has visited USA, Canada, Italy, Malta, Malaysia, Indonesia, Thailand, Iran, Nigeria, Syria, Philippines, and South Africa representing the country in different international fora.

A prolific writer, Prof Ahmad has to his credit 77 research papers and 10 technical papers.

Prof Ahmad brings to his new office a wealth of scholarship and wide and varied experience. *University News* wishes him a very fruitful term as the President of the Association of Indian Universities.

News from Agricultural Universities

Seminar on Seed Technology Development

The national seminar on Seed Technology Development that concluded at CCS Haryana Agricultural University recently recommended establishment of seed villages at block level. More than 200 participants from all over country who debated on various issues of seed at the seminar were of the view that inspite of all the efforts of the organised and unorganised seed sectors, atleast 50 to 60 per cent of the seed requirement in the country is met from farmer's saved seed. Therefore, it was imperative that seed villages be established and farmers and especially the farm women, be given training in the improved seed production at priority level.

The valedictory session, which was chaired by Dr. C.R. Hazra, Agriculture Commissioner, Govt. of India, debated on several emerging issues to invite the attention of the state and central governments and organisations associated with the improvement of quality of life of the rural people.

According to Dr. B.S. Dahiya, Coordinator, Seed Production Technology Centre, CCSHAU and Convener of the seminar, the valedictory session stressed that in future only B.Sc (Agri.) graduates be allowed to enter in seed trade and licences be given only to those graduates who had atleast 6 months experience in seed quality assurance. The participants expressed concern that presently there were around 10000 licenced seed dealers who had no background of seed technology. The participants were of the view that the future Indian seed industry will be high-tech private seed industry having vast export potential as the country was gifted with diversity of climate and well organised research and development infrastructure and expertise in plant breeding. On the contrary, the neighbouring countries do not have any organised seed programme as also the adequate infrastructure and there was ample potential that India could become a major seed exporter for the developing world as well as Europe. The participants were of the view that trained human power be produced for which establishment of atleast 20 well equipped seed centres in various agro-climatic zones of the country was essential.

The participants suggested check on spread of diseases and weeds through seeds. They were of the view that seed health is quite important an area for future agriculture and already the nation has experienced the entry of a number of weed diseases and insects and pests coming with the imported seeds. They urged the government that all entry points of the seeds such as airports, land routes and coastal ports need to be strengthened with trained and well qualified staff so that future threat to the food security is taken care of.

News from UGC

Countrywide Classroom Programme

Between 22th and 28th January, 1999 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 6.30 a.m. two days a week i.e. on Saturdays and Sundays. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

Hindi Programmes are being telecast on Mondays to Fridays from 6.00 to 6.30 a.m.

22.1.99
"Bookfare (Identities)"
"Whither Heritage-Tomb of Saidamina"

23.1.99
"Comet Charisma-6 (1995-1997)"
"Communication Among Honey Bees"

24.1.99
"The Palm Oil"
"From Science & Society to Science in Society-2"

25.1.99
"Exploring Eden — Flora of Sunderbans"

26.1.99
"Disha-4 : Computer Software"

27.1.99
"Feeling Good-4"
"Life Unreached — Causes of Infertility-1"

28.1.99
"Question Time-98"
"Love"

29.1.99
"Bookfare-Children's Literature"
"For they Stayed on"

30.1.99
"Universe & Black Holes"

31.1.99
"Transgenesis"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

22.1.99
"यादों की दहलीज पर गज़ल का सफरनामा : भाग-2"
"संगठित महिला श्रमिक"

25.1.99
"जूट का विविध रूपण : सूर्यास्त से सूर्योदय"

26.1.99
"खनिजों के भौतिक गुणधर्म"

27.1.99
"दोलन गति : भाग-4"
"सरस्वती महल"

28.1.99
"वंदे मातरम् : गदर पार्टी-पंडित राम प्रसाद बिस्मिल"
"होल्कर छतरी वास्तुकला : भाग-2"

29.1.99
"जन कवि त्रिलोचन : कविता के जनपद में"

BOOK REVIEW

Authentic, Well Written

Tamo Mibang*

M.L. Bose, History of Arunachal Pradesh, Delhi, Concept Publishing Company, 1997. Pp. xiv+298. Rs. 100/-.

History of Arunachal Pradesh of M.L. Bose is an important work. Well written about the area, the people and their socio-economic and political life.

This book is written in lucid style which clearly reflects the political geographical landscape of the region beginning from the Inner Line to the Mac Mahon Line which leads to border problems with China. Inspite of this longstanding political issue, the tribal people of Arunachal Pradesh feel that they do not have any socio-cultural relations or physical affinity with the Tibetans or the ethnic Chinese groups. The British imperialists' design to create a political foothold of their own in the tribal dominated region of North-East India to keep a watch over growing communist China, Burma (Myanmar) and then India, seems to have created an adverse impact in the minds of certain tribal groups of the region. A little explanation of it might have created a curiosity to know about the people and region in better perspective.

The influence of missionary activities upon the tribal people is also well taken into account. Col. Hopkinson's proposal for tribal administration and development has a special bearing on this. He has emphasised that the tribal people must be helped to come up like their other brethern for which the government has a special responsibility.

This is the first book of its kind to give authentic information on the history of the state. Moreover, it deals with important political aspects of Arunachal Pradesh not covered so far by other writers. It arouses among the readers love for the tribal people of the region. His description of the British rule in Arunachal Pradesh, as I see, is a true picture of the situation that prevailed during those days wherein practically there was no administration but a mere policy to subjugate the people. The effective administration began only after the country's independence in 1947 and with this started rapid socio-economic and political transformation of the state. This is, perhaps, the most striking contribution of the book.

Bose is a scholar of good standing. He has to his credit a number of valuable works on the history of North-East India. His present work is an expression of his love for Arunachal people with a strong plea, of course, with an academic interest, that the tribal people are very vibrant who can take advantage of the modern system and manage their own affairs.

**Dean, Faculty of Social Sciences, Arunachal University, Rono Hills, Itanagar-791 111.*

UNIVERSITY OF KERALA

No.PR.1/1030/37/98 NOTIFICATION

Applications are invited for appointment to the following posts:

Sl No.	Post	Dept.	Scale of pay Rs.	Age as on 1.1.1998.	Vacancy	Quota
1.	Reader	Law	3700-5700	Not more than 45 years	1	Ezhava
2.	Lecturer	Linguistics	2200-4000	Not more than 40 years	3	SC-1 Open 1 Muslim 1

Note: * *Usual relaxation in upper age limit for SC/ST/OBC and those already in the teaching service of the University.*

* *In the case of reserved posts, if no candidates from the said communities are found suitable, applicants from other reserved communities will be considered in accordance with the communal rotation and in the absence of such suitable candidates, members of forward communities will also be cosidered.*

Cost of application: Rs.300 for post 1, Rs.150 for post 2

Qualifications: As per U.G.C. norms.-

Mode of remittance: By D.D. drawn on SBT/SBI/DCB (candidates residing outside the State may send DD drawn on any Nationalised Bank), in favour of the Finance Officer, University of Kerala, payable at Thiruvananthapuram or by pay-in-slip at the University Cash counter (Applicants who send DD should note on its reverse, their name and purpose of remittance).

Application forms and more details: can be had from the Section Officer, Forms Section, University of Kerala, Thiruvananthapuram 695 034, specifying post and enclosing DD/ Pay-in-slip, towards cost of application.

Last Date : 30-1-1999

Thiruvananthapuram,
28.12.1998

Dr. G. Sidhardhan
Registrar

NB: *For post 1, those who have already applied in response to the earlier notification,PR1.1030/13/98 dated 6-6-98 are exempted from applying again, provided they possess the required present qualifications at the time of earlier submission of their applications.*

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

AGRICULTURAL SCIENCES

Agriculture

1. Chundamannil, Mammen. **Teak plantations in Kerala : An Analysis of productivity and profitability** (Dr K K George), Department of Agriculture, Cochin university of Science and Technology, Kochi.

2. Jadhavar, Vasant Tatyaba. **Studies on intercropping of short duration vegetables with chilli (capsicum annum L) cv Parbhani Tejas** (Dr M B Sontakke), Department of Agriculture, Marathwada Agricultural University, Parbhani.

3. Narasimhachari, C Laxmi. **Investigations on the etiology of soybean bud blight disease in Marathwada.** (Dr N T Vyanjane), Department of Agriculture, Marathwada Agricultural University, Parbhani.

4. Shaikh Abdul Rasheed. **Evaluation of diagnosis and recommendation integrated system (DRIS) as a guide for sorghum nutrition.** (Dr C P Ghonshikar), Department of Agriculture, Marathwada Agricultural University, Parbhani.

5. Singh, Ravinder. **Performance of tomato hybride under different fertility regimes.** (Dr U K Kohli), Department of Agriculture, Dr Yashwant Singh Parmar University of Horticulture and Forestry, Solan.

Veterinary Medicine

1. **Kolte, Anilkumar Yashwant.** Studies on clinical and haemathobiochemical profile and their correlation with gross and histopathological lesions in bovines. **Department of Veterinary Medicine, Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola.**

BIOLOGICAL SCIENCES

Applied Botany

1. Prasad, Devi A G. **Studies on cytogenetics, phytochemistry and tissue culture in albergia species.** (Dr K S Jagadish Chandra), Department of Applied Botany, University of Mysore, Mysore.

Botany

2. Ali, Gayoor. **Studies on growth morphogenesis and some biochemical aspects of (Bacopa Monniera L wettst) under the stress of nacl and certain heavy metals.** (Prof P S Srivastava), Department of Botany, Jamia Hamdard, New Delhi.

3. Gokul, H **A study of alkaloid biosynthesis in the cultures of cissampelos pereira L** (Dr D H Tejavathi), Department of Botany, Bangalore University, Bangalore.

4. Jayantilal, Mehta Kalpesh. **Biomass and net production of herbaceous layer in dry deciduous forest at Bhavnagar.** (Dr B R Pandit), Department of Botany, Bhavnagar University, Bhavnagar.

5. Priyadarshani, Shweta. **Effect of aqueous leaf and flower extracts of carrot weed (Parthenium hysterophorus L) on cytomorphological characteristics in cultivated turnip.** (Dr Chandreshwar Prasad), Department of Botany, Vinoba Bhave University, Hazaribag.

6. Rajam Chitra, T. **Prevalence identification and seed transmission of to bamovirus in tomato and bell pepper grown in Karnataka.** (Dr Prakash H S), Department of Botany, University of Mysore, Mysore.

7. Rao, Ruth M Varakanthi. **Tissue culture studies in capsicum annuum L.** (Dr B Pratibhadevi), Department of Botany, Osmania University, Hyderabad.

8. Roy, Sanjay Kumar. **Pharmacognostical and phytochemical investigation on market samples of controversial drugs Sariva and Jivanti.** (Dr M P Sharma), Department of Botany, Jamia Hamdard, New Delhi.

9. Sinha, Nirmal Kumar. **In vitro studies on some legume.** (Dr M A Mallick), Department of Botany, Vinoba Bhave University, Hazaribag.

10. Yasodhara, V. **In vitro studies on a medicinal forest tree (Strychnos nux vomica L.)** (Prof K Subhash), Department of Botany, Kakatiya University, Warangal.

Food sciences

1. Chakravarty, Meera. **Development of enteral foods based on malted cereals.** (Dr N G Malleshi), Department of Food Science, University of Mysore, Mysore.

Life Sciences

1. Alam, Mehjebin Sultana. **Studies on mass clonal multiplication of a few forest trees on N E India through in vitro micropropaga.** (Dr Anjana Baruah), Department of Life Sciences, Dibrugarh University, Dibrugarh.

2. Chakraborty, Supriyo. **Genetic study of some quantitative components of yield in blackgram (Vigna mungo L hepper).** (Prof P K Barua), Department of Life Sciences, Dibrugarh University, Dibrugarh.

3. Chandrasekhar, Beena. **Homeostatic erythrocidal mechanisms in primary and secondary lymphoid organs.** (Prof R K Saxena), School of Life Sciences, Jawaharlal Nehru University, New Delhi.

Microbiology

1. Patel, Thakaman. **Microbial community and biochemical activities of soil under pasture in the vicinity of steel plant.** (Dr R K Mohanty), Department of Microbiology, Sambalpur University, Burla.

Sericulture

1. T D Nagendra Kumar. **Studies on the response of (mulberry morus sp to phosphate solubilizing micro organisms.** (Dr J Sukumar), Department of Sericulture, Bangalore University, Bangalore.

Toxicology

1. Agarwal, Renu. **Biochemical studies on the blood barain barrier dysfunctions with particular reference to xenobiotic exposure.** (Dr G S Shukla), Department of Toxicology, Jamia Hamdard, New Delhi.

Zoology

1. Bhagya Jaya Raju, P. **Studies on the murrel fishery of lake Kolleru and biology of spotted murrel channa punctatus Bloch, 1973.** (Prof S V Sharma), Department of Zoology, Nagarjuna University, Nagarjunanagar.

2. Mandal, Ananda Kumar. **Path coefficient analysis,genetic variability and divergence of different cultivars of solanum melongena for screening relative susceptibility to major insect pests specially to leucinodes orbonalis.** (Dr A Mukhopadhyay), Department of Zoology, University of North Bengal, Raja Rammohunpur, Darjeeling.

3. Parvatagouda, Kailasgoudar Yallappagouda. **Effects of some toxic metals to gambusia affinis B and G with reference to the environmental factors.** (Dr H S Patil), Department of Zoology, Karnatak University, Dharwad.

4. Prabhakar, Vandana. **Studies on the cestode parasites of vertebrates from Aurangabad District, M.S. Marathwada, 1998** (Dr G B Shinde), Department of Zoology, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5. Ramrao, Vitthal More. **Biological studies of some of the Helminth parasities.** (Dr S D Kalyankar), Department of Zoology, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

6. Rao, K G Krishna. **Effect of carbamate insecticide on food and water utilization budgets and some biochemical aspects of the silkworm (Bombyx mori L).** (Dr M R Delvi), Department of Zoology, Bangalore University, Bangalore.

7. Rao, K Venkat. **Investigations on immunological and biochemical profiles in human colorectal cancer.** (Prof J D Goud), Department of Zoology, Osmania University, Hyderabad.

8. Sonar, Avadhoot. **Studies on the role of hormones in the regulation of reproductive activities in calotes versicolor.** (Dr Saraswati B Patil), Department of Zoology, Gulbarga University, Gulbarga.

EARTH SYSTEM SCIENCES

Earth Sciences

1. Chanu, Akoijam Anit. **Geochemical and radiogenic isotopic study of groundwater of Imphal area, Manipur.** (Prof Rajesh Anand), Department of Earth Science, Manipur University, Imphal.

Geology

1. Goswami, Uttam. **A study on fluvial processes and ground water prospect evaluation of the lower Subansiri basin, Assam.** (Prof J N Sarma) Department of Geology, Dibrugarh University, Dibrugarh.

2. Malarkodi, N. **Geologic studies of lower tertiary sediments of the ariyalur area, Tiruchirapalli district, Tamil Nadu, South India.** (Dr H M Nagaraja), Department of Geology, Bangalore University, Bangalore.

Oceanography

3. Rajagopal, M D. **Some aspects on the interrelationships between nutrients and plankton in the estuarine and nearshore regions of Goa.** (Dr R Sen Gupta), Department of Oceanography, Cochin University of Science and Technology, Kochi.

ENGINEERING SCIENCES

Civil Engineering

1. Rao, B N D Narasinga. **Influence of industrial effluents on volume change behaviour of soils.** (Dr R Rama Rao), Department of Civil Engineering, Andhra University, Waltair.

Electronics

1. Bhat, G Mohiud-Din **Design and development of novel electronic circuits for efficient and secure message communication.** (Prof Wasim Ahmad), Department of Electronics, Aligarh Muslim University, Aligarh.

Mechanical Engineering

1. Nagarajan, M. **Feasibility studies of aluminium/copper graphite composite and its application to antennae.** (Dr Sharma S C), Department of Mechanical Engineering, University of Mysore, Mysore.

Technology

1. Mukhopadhyay, Partha. **Role of cysteine residues in recognition and cleavage of DNA by BamHI endonuclease.** (Prof Kunal B Roy), Centre for Biotechnology, Jawaharlal Nehru University, New Delhi.

2. Satheesh Kumar, K. **Studies on the chaotic rheological parameters of periodically forced suspensions of weak brownian slender bodies in simple shear flow.** (Dr T R Ramamohan), Department of Technology, Cochin University of Science and Technology, Kochi.

MATHEMATICAL SCIENCES

Mathematics

1. Das, Pali. **Solutions of some single facility location problems.** Department of Mathematics, University of North Bengal, Raja Rammohunpur, Darjeeling.

2. Qamaruddin. **Infinite matrices and applications** (Dr Mursaleen), Department of Mathematics, Aligarh Muslim University, Aligarh.

3. Singh, Nand Kishore. **Concepts and growth of mathematics in ancient India.** (Dr H S Yadav), Department of Mathematics, Vinoba Bhave University, Hazaribag.

Statistics

1. Anjuman Ara Begum. **Moments of concomitants of order statistics.** (Prof A H Khan), Department of Statistics, Aligarh Muslim University, Aligarh.

MEDICAL SCIENCES

1. Manjula, R **Aspects of Kannada intonation in discourse.** (Prof N P Nataraja), Department of Speech Pathology, University of Mysore, Mysore.

MEDICAL SCIENCES

1. Gangal, Hanumaraddi Timmaraddi. **Per-cutaneous endoscopy.** Department of Surgery, Karnatak University, Dharwad.

2. Mahajan, Babita. **T-lymphocyte subsets and cytokine profile in experimental murine cerebral malaria.** Department of Parasitology, Postgraduate Institute of Medical Education and Research, Chandigarh.

PHYSICAL SCIENCES

Chemistry

1. Afzalpurkar, Abijit Ashok. **Contraceptive potential of peptides corresponding to functionally relevant B cell epitopes of zona pellucida glycoproteins.** (Dr S K Gupta), National Institute of Immunology, Jawaharlal Nehru University, New Delhi.

2. Jyothi, P **An evaluation of mechanistic and metabolic interactions of L-ODAP and L-Homoarginine, the two unusual amine acids of L sativus in the manifestations of neurotoxicity.** (Prof S L N Rao), Department of Biochemistry, Osmania University, Hyderabad.

3. Mishra, Rajni. **Studies on lipid composition and energy metabolism of epididymis in rat.** (Dr B S Setty), Department of Biochemistry, Jamia Hamdard, New Delhi.

4. Murthy, Narasimha K. **Biochemical and toxicological studies on thermally treated oils** (Dr Raina P L), Department of Biochemistry, University of Mysore, Mysore.

5. Surya Prakash, P. **Studies on proteins of sunflower seed helianthus annuus L structural stability and interaction with polyphenols.** (Dr V Prakash), Department of Biochemistry, University of Mysore, Mysore.

Chemistry

1. Barua, Bipul. **Dipolar cycloaddition reactions in the synthesis of novel uracil analogues.** (Dr J S Sandhu), Department of Chemistry, Dibrugarh University, Dibrugarh.

2. Bhat, Ganapati Gopalkrishna. **Studies on unusual fatty acids and synthesis of some fatty acid derivatives of biological interest.** (Dr C D Daulatabad), Department of Chemistry, Karnatak University, Dharwad.

3. Bindhu Jacob. **A comparative study of medium and large pore zeolites in alkylation reactions.** (Dr S Sugunan), Department of Chemistry, Cochin University of Science and Technology, Kochi.

4. Boruah, Anima. **Cycloaddition reactions in the synthesis of novel heterocycles of biological significance.** (Dr J S Sandhu), Department of Chemistry, Dibrugarh University, Dibrugarh.

5. Chahar, Jay Pal Singh. **Studies on thin layer chromatographic analysis of inorganic ions.** (Dr Ali Mohammad), Department of Chemistry, Aligarh Muslim University, Aligarh.

6. Demappa, T. **Oxidation of substrates with N-metallo-N-Arylhalo sulphonamides : A kinetic study** (Dr S Ananda), Department of Chemistry, University of Mysore, Mysore.

7. Dhamodaran, T K. **Preservative treatment and chemical modification of rubber wood** (Dr R Gnanaharan), Department of Chemistry, Cochin University of Sciencae and Technology,Kochi.

8. Dixit, Mridula. **Synthesis and characterisation of novel metal hydroxides as potential positive electrodes for alakaline secondary batteries.** (Dr P Vishnu Kamath), Department of Chemistry, Bangalore University, Bangalore.

9. Gopalakrishnan, C R. **Synthesis and physical properties of some mesogenic chiral polysiloxanes.** (Dr B K Sadashiva), Department of Chemistry, Bangalore University, Bangalore.

10. Gurpreet Kaur. **Development of some new chemoselective methodologies and biological evaluation of organic molecules.** Department of Chemistry, Punjab Agricultural University, Ludhiana.

11. Guruputra, Mallur Shanta. **Synthetic studies in mesoionic compounds of pharmacological interest.** (Dr B V Badami), Department of Chemistry, Karnatak University, Dharwad.

12. Jasbir Singh. **Interaction of organic pollutants and fly ash with soils and crops.** (Prof Samiullah Khan), Department of Chemistry, Aligarh Muslim University, Aligarh.

13. Parida, Sudam Kumar. **Adsorption behaviour of alkyl pyridinium styryl dyes.** (Dr B K Mishra), Department of Chemistry, Sambalpur University, Burla.

14. Patil, Limbraj Rajaram. **A synthetic approach for new nitrogen and/or sulphur heterocyclic compounds.** (Dr B D B Ingle), Department of chemistry, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

15. Reddy, G thirupathi. **Spectroscopic assay of molecular interactions.** (Dr A Ram Reddy), Department of Chemistry, Osmania University, Hyderabad.

16. Sharma, Radhika. **Kinetic and thermodynamic properties of three phase mixtures.** (Dr Sanjay Puri), School of Physical Sciences, Jawaharlal Nehru University, New Delhi.

17. T Giridhar. **Synthesis of new five and six membered nitrogen heterocyclic compounds with possible biological activity.** (Dr G V P Chandramouli), Department of Chemistry, Kakatiya University, Warangal.

Physics

1. Gowda, Krishne D. **X-Ray, Optical and electro-optical studies of some liquid crystals and crystals.** (Dr D Revannasiddaiah), Department of Physics, University of Mysore, Mysore.

2. Leelamma, K K. **Studies in condensed matter physics using of Q-oscillator algebra** (Dr K Babu Joseph), Department of physics, Cochin University of Science and Technology, Kochi.

3. N Peer Mohamed Sathik. **Study of excitation functions for alpha induced reactions in some nuclei.** (Dr Mohd Afzal Ansari), Department of Physics, Aligarh Muslim University, Aligarh.

4. Pal, Biswajit. **Spectroscopic studies of proteins and azo dyes : protein secondary structure, structural changes in dyes and dyeprotein interactions.** (Prof P K Bajpai), Department of Physics, North Eastern Hill University, Shillong.

5. Rame Gowda M, **Structural investigations of some phenoxazine derivatives.** (Prof J Shashidhara Prasad), University of Mysore, Mysore.

6. Venkateswarlu, Palcha. **Pixe applications to interdisciplinary areas and study of chemical and multiple ionisation effects on X-Ray transition probabilities.** (Prof V Seshagiri Rao), Department of Physics, Andhra University, Waltair.

Toxicology

Barua, Acheenta Gohain. **Impact of mycobacterium habana vaccine on immune status of rodents and human effector cells.** (Dr N B Singh), Department of Toxicology, Jamia Hamdard, New Delhi.

CLASSIFIED ADVERTISEMENTS

AMRAVATI UNIVERSITY

EMPLOYMENT NOTICE

No.AU/EST/1/103/A-3917/99

Dated : 1st January, 99

Applications are invited in the prescribed application form for the following teaching posts.

I. **PROFESSOR** : One each in Applied Electronics, Computer Science and Bio-Technology.

II. **READER** : One each in Chemistry, Botany, Home Science, Bio-Technology, Physical Education and Two Posts in Computer Science.

III. **LECTURER** : One each in Education (Lien vacancy), Mathematics and Computer Science (SC) and Two Posts each in Home Science (1 OBC and 1 Open) (include 1 Lien vacancy), Physics, Zoology, Applied Electronics (1 OBC, 1 Open) (include 1 Lien vacancy), Chemical Technology (include 1 Lien vacancy) and Business Administration (1 OBC, 1 Open) (include 1 Lien vacancy).

IV. **DIRECTOR OF PHYSICAL EDUCATION** : 1 Post

For details of qualifications, experience, specialization, scale of pay etc. with regard to above teaching posts, please see advertisement published in EMPLOYMENT NEWS dated 2nd January 1999 on Page No. 3.

Dr. Vandan Mohod
REGISTRAR

INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

(DEEMED UNIVERSITY)

GOVANDI STATION ROAD, DEONAR, MUMBAI # 400 088

Applications are invited for the following posts at the Institute :

1) READER (4 POSTS)

(1 - Department of Mathematical Demography and Statistics)

(2 - Department of Fertility Studies)

(1 - Department of Public Health and Mortality Studies)

DEPARTMENT OF MATHEMATICAL DEMOGRAPHY AND STATISTICS)

Qualifications Required i) Essential : Ph.D in Demography or in Statistics/ Mathematics with specialization in Demography and with minimum of 8 years experience of which 5 years experience as a Lecturer of post-graduate teaching and/or research in Population Studies preferably in the field of Mathematical Demography at a University or national Institution. Candidates from outside the University system in addition shall also possess a good academic record with atleast 55% marks or equivalent grade at the Master's degree level.

ii) Desirable : Experience of guiding research students for the award of Ph.D in Demography and/or original publications in reputed journals in the area of Mathematical Demography.

DEPARTMENT OF FERTILITY STUDIES

i) Essential: Ph.D in Demography/ Population Studies/Biomedical Science/ Environmental Sciences or in any Social Science subjects listed in ICSSR/Statistics/ Mathematics with specialization in Population Studies and with minimum of 8 years experience of which 5 years experience as Lecturer of post-graduate teaching/research in Population Studies preferably in the area of Fertility Studies at a University/National Institution. Candidates from outside university system, in addition should have atleast 55% marks or an equivalent grade at the Master's degree level.

ii) Desirable : Experience of guiding students for the award of Ph.D. Degree in Population Studies and/or research publications in reputed research journals in the area of fertility studies.

DEPARTMENT OF PUBLIC HEALTH AND MORTALITY STUDIES

i) Essential : Ph.D. in Demography/ Bio Medical Science/Environmental Science or in any Social Science subject listed in ICSSR/Statistics/Mathematics with specialization in Population Studies and with minimum of 8 years experience of which 5 years experience as a lecturer of Post-graduate teaching/research in Population Studies, preferably in the area of Public Health and/or Mortality Studies at a University/National Institution. Candidates from outside the University system, in addition, should have atleast 55% of marks or an equivalent grade at the Master's degree level.

ii) Desirable : Experience of guiding students for the award of Ph.D degree in Population Studies and/or research publications in a reputed research journals in the area of Public Health and Mortality Studies.

Scale of Pay : Rs. 12000-420-18300

Age Limit : 45 years

2) LECTURER (Dept. of Migration and Urban Studies) (ONE POST)

Qualifications required : i) Essential : A Master's degree in Population Studies or in any Social Sciences subject including Statistics/ Mathematics with specialisation in Population Studies with atleast 55% of marks or equivalent grade at the Master's degree level. Candidates, besides fulfilling the above qualifications should have cleared the National Eligibility Test for Lecturers conducted by the UGC, CSIR or similar test accredited by the UGC.

ii) Desirable : Ph.D degree in Population Studies with specialisation in Migration and Urban Studies and/or Research Publications in the area of Migration and Urban Studies.

Scale of Pay : Rs. 8000-275-13500

Age Limit : 35 years.

3) HINDI TRANSLATOR (ONE POST-Reserved for Schedule Caste)

Qualifications required : Masters Degree of a recognized University in Hindi/ English with English/Hindi as a main subject at Degree level OR Master's degree of a recognized University in any subject other than Hindi/English with Hindi and English as main subject at degree level OR Master's degree of a recognized University in any other subject other than Hindi/English Medium and English/Hindi as Main subject at degree level OR Master's degree in Hindi/English OR in any subject with Hindi/English OR in any subject with Hindi/English Medium with English/Hindi as a Main subject OR as a medium of examination at degree level or Bachelor's degree with Hindi and English as main subjects OR either of the two as medium of examination and the other as a main subject plus recognized Diploma/Certificate course in translation from Hindi to English and vice versa OR two years experience of translation work from Hindi to English and vice-versa in Central/State Govt. Offices including Government of India Undertakings.

Scale of Pay : Rs. 5000-150-8000

Age : 35 years.

All posts carry dearness and other allowances as admissible to Central Government employees of equivalent grade stationed in Mumbai.

Applications in the following format alongwith certified true copies of all testimonials and certificates should reach the Director, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088 **latest by February 08, 1999.** Applicants working in Government/Semi-Government organisations should send their applications through proper channel. Applications incomplete, without attested certificates and not received by due-date shall be rejected.

APPLICATION FORM

Affix Passport
size Photo
with signature

1) Application for the post of :

2) Name (in block letters) :

3) Parent's/Spouse's Name :

4) Date of Birth (Attach Certificate) :

5) Residential Address :

a) Permanent :

b) Present :

6) Nationality :

7) Marital Status :

8) Educational Qualifications including specialization (Attach Certificates and Marksheets including NET for Lecturers conducted by UGC) :

9) Experience (Indicate work, Teaching and Ph.D. Guidance separately) :

10) References (Rank of Gazzetted Officer) :

11) Details of Employment (Duration with date, Post Held and Organisation) :

12) Details of Books/Articles/Research work Published. (If any) :

13) Any other information (attach separate sheet) :

14) Caste (Enclose proof of certificate issued by authority empowered for the purpose) :

DECLARATION

I declare that all the details furnished in this application and the enclosed annexures are true to the best of my knowledge and belief.

Date : Signature of Applicant

ASSAM UNIVERSITY : SILCHAR

(A CENTRAL UNIVERSITY CONSTITUTED UNDER ACT XIII OF 1989)

EMPLOYMENT NOTIFICATION NO. 102/1/98/3 DT. 29.12.98

The Assam University invites application in the prescribed form for preparing a panel for the following faculty/administrative positions which shall be filled up over a period of 2 years.

1.	Professor	— 3 post	:	One each for the Deptt. of Computer Science, Linguistics Manipuri.
2.	Co-Ordinator Grade-I (in Dy. Registrar grade)	— 1 post	:	SC/ST cell
3.	Research-cum-statistical Officer (in Asstt. Registrar grade)	— 1 post	:	SC/ST cell
4.	Administrative Assistant (S. O. grade) (All posts of SC/ST cell are IXth Plan posts, may continue in next plan)		:	SC/ST cell
5.	Lecturer	— 43 posts	:	Two posts each in the Deptt. of English, Bengali, History Economics, Social Work, Mathematics, Chemistry, Physics, Computer Sc. Business Admn. Education, Fine Arts, Ecology, Mass Comm. Arabic. One post each in the Deptt. of Linguistics, Manipuri, Sociology, Philosophy. Three posts each in the Deptt. of Life Science, Pol. Science, Commerce.

One post of Lecturer in the Deptt. of Arabic, Commerce and Pol. Science is reserved for SC/ST.

Scales of pay (Revised) and gross emoluments at the minimum of the scale are as under :

Sl. No.	Post	Scale of pay (Revised)	Gross monthly emoluments at the minimum
1.	Professor	16400-450-20900-500-22400	Rs. 21638.00
2.	Co-Ordinator	12000-420-18300	Rs. 15940.00
3.	Research-cum-statistical Officer	8000-275-13500	Rs. 10720.00
4.	Admn. Assistant	6500-200-10500	Rs. 8978.00

Last date of collection of form : 30.4.99

Last date of receipt of form : 10.5.99

Cost of application form : Rs. 20/- per set

Application fee : Rs. 50/- (Rs. 25/- for SC/ST/OBC/Physically handicapped)

Draft may be prepared in favour of Finance Officer, Assam University, Silchar payable at SBI, REC, Code No. 7061.

Application form and eligibility criteria can be had either in person or by sending self addressed stamped envelope of size 28x12 cm. alongwith draft of Rs. 20/-. Application may be addressed to the Registrar, Assam University, Silchar, Post Box No. 63, Silchar-788001.

Applications in prescribed form complete in all respect alongwith attested copies of Marksheets/Certificates, Experience Certificates and the details on Research and Publications in support of eligibility may be sent to the Registrar.

Candidates already in service should submit their application through proper channel. An advance copy may however, be sent directly Applications received after stipulated date or incomplete in any respect will not be entertained and no further correspondence will be made in this regard. The University reserves the right to negotiate with suitable person who may not have applied formally. The University also reserves the right to fill up or not to fill up any post or to call only selected candidates for interview. Assam University is a newly established Teaching-cum-affiliating Central University which is now functioning from temporary accommodations. The selected Teachers and Officers shall be expected to brave the initial inconveniences to take up the challenge of providing a strong academic foundation to the University with conviction, confidence and creativity.

(A. Malique)
DY. REGISTRAR (ESTT.)

CENTRAL INSTITUTE OF FISHERIES EDUCATION

(I.C.A.R.)

VERSOVA, MUMBAI 400 061

Applications are invited on plain paper for the award of two Sr. Research Fellowship to carry out the work on "Micro-flora Associated with Histamine formation and Histamine Decomposition" at the Central Institute of Fisheries Education, Mumbai with the following conditions :

1) **Sr. Research Fellowships** .. Two Fellowship @ Rs. 2500/- p.m. + H.R.A. Rs. 450/- p.m.

Duration ... 3 years or till the validity of the project.

Educational Qualification : M.F.Sc./M.Sc. Microbiology/M.Sc. Biotechnology with a first class degree. Preference will be given to candidates having work experience on Histamine.

Age ... Below 45 years.

(N.B. : The fellows are eligible for registration for Ph.D of any other University, if they so desire.)

The applications should reach the Sr.AO/Registrar, Central Institute of Fisheries Education (ICAR), (Deemed University), J.P. Road, Seven Bungalows, Versova, Andheri (West), Mumbai-400 061 within 15 days of the release of the advertisement.

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH
NEW DELHI-110 001.

ADVERTISEMENT NO. 13/98

POSITION : DIRECTOR, NATIONAL INSTITUTE OF SCIENCE COMMUNICATION, (NISCOM) NEW DELHI

Council of Scientific and Industrial Research (CSIR) is the premier industrial R&D organisation in India. It has a network of 40 R&D and related service institutions spread throughout the country covering diverse S&T disciplines and serving a wide gamut of socio-economic sectors. CSIR is seeking to appoint in its covered top-level S&T management position a Director for its National Institute of Science Communication (NISCOM), New Delhi.

NISCOM situated at Pusa, the heartland of New Delhi's R&D establishments provides multifaceted services to S&T community and the Lab Public by bringing out a wide variety of S&T publications in electronic & printed format, including research journals, encyclopaedias, monographs, popular science journals and books, newsletters, handbooks and S&T status reports and developing human resources for S&T communication through training as well as M.Phil. & Ph.D. programmes.

The Director serves as the Chief Executive of the Institute and would be responsible, among others, for

- Developing and managing a perspective plan for the Institute;
- Providing leadership to the diverse R&D and service groups;
- Day-to-day operations and man-management of the Institute;
- Negotiating and acquiring grants/contracts;
- Ensuring linkages with user agencies, including universities and industries; and
- Marketing the knowledgebase expertise and services of the Institute.

The candidate for the post must be a creative, innovative and well-established scientist/technologist of distinction and should be around 50 years of age. He should have a broad scientific and technical vision, a demonstrated ability to create an environment conducive to nurturing of a high quality S&T communication and service organisation a proven record of inter-personal skills and an ability to communicate effectively.

This is a contractual appointment for a period of six years or superannuation (at the age of 60 years), whichever is earlier, in the scale of Rs. 18,400-500-22,400 plus allowances as admissible to Council employees. The contract can be extended for another term in very exceptional cases. There is a facility to share the monies realised from external contract R&D, consultancy and rendering of S&T services. Residential accommodation may be provided as per rules on payment of prescribed licence fee.

Interested candidates may send their complete biodata by **30th January 1999** to the Director General, Council of Scientific & Industrial Research, Anusandhan Bhawan, Rafi Marg, New Delhi-110 001, Fax 011-3710618, E-mail dgcsir@csirhq.ren.nic.in.

INDIAN INSTITUTE OF FOREST MANAGEMENT
BHOPAL

(An autonomous Institute of the Ministry of Environment & Forests, Govt. of India)

Advt. No. IIFM/AMT/A-28(2)/98

The Indian Institute of Forest Management (IIFM) is a national Institute of autonomous character funded by the Ministry of Environment & Forests, Govt. of India, to cater to the training, education, research and consultation needs of the forestry and allied sectors in India.

The post of **Finance Officer** in the Pay Scale of Rs. 10,000-325-15,200 is vacant at the Institute. The Institute proposes to fill up the post with a suitable officer on deputation basis initially for a period of two years which could be extended further as per the discretion of the Board of Governors.

The qualifications required for the post are as follows :

> "Graduate in Commerce/Business Management with specialisation in Accounting, Financial Management or have passed S.A.S. and has worked at Senior levels in the pay-scales given below. Candidates should have minimum 8/5 years post qualification experience in Accounts/Finance Department in any Govt./Public Sector Undertakings/ Autonomous body in the pay-scale of Rs. 6,500-10,500/8000-13,500 (revised) or equivalent, dealing with Accounting, Cost Accounting, Budgeting, Internal Audit, etc. Candidates who have passed the final examination of ICWA/CA or have cleared IAAS/ awarded IAAS and exposure to computer applications would be preferred. The person applying for the job should not be more than 55 years of age as on 31.1.99.
>
> The minimum educational qualifications can be relaxed in case of exceptionally outstanding and deserving candidates.

The application giving details in block letters viz : (a) Name, (b) Postal address (Permanent and present), (c) Date of birth, (d) Age as on 31.1.99, (e) Educational Qualifications indicating clearly examination passed, year, university, (f) Experience indicating clearly, the post held, pay-scale, total emoluments, (g) Integrity and clearance certificate from vigilance angle, etc. may be sent through proper channel to Director, Indian Institute of Forest Management, Nehru Nagar, Bhopal by Registered Post so as to reach on latest **by 31.1.99.** In the event of delay in sending applications through proper channel, advance copy may be sent.

DIRECTOR

Phone : 575998, Fax : 0755-572878, E-mail : iifmmail.@iifmb ren.nic.in

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